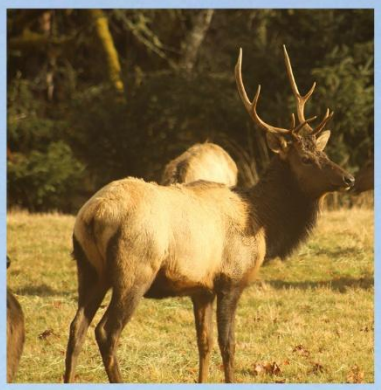

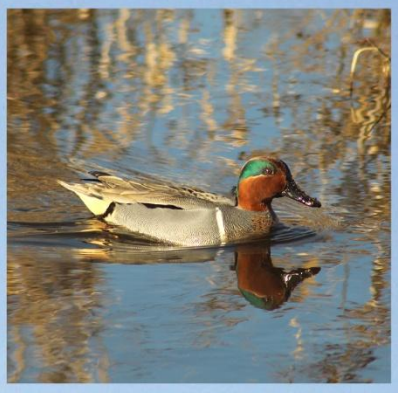

Review and Guidance for Projects in the Columbia River Basin Fish and Wildlife Program
2026 Lands Project Review

INDEPENDENT SCIENTIFIC REVIEW PANEL
ISRP 2026-4 / JUNE 26, 2026

Report cover design by Eric Schrepel, Technical and Web Data Specialist, Northwest Power and Conservation Council

Photos of Roosevelt elk, green-winged teal, and North American river otter by Max Merrill, and view of Lake Roosevelt from the Confederated Tribes of the Colville Reservation, Washington, by Erik Merrill.

Note on ISRP Membership and Conflicts of Interest

ISRP reviewers do not have direct, current financial conflicts of interest with projects funded by the Bonneville Power Administration. But members do have a variety of relationships with fish and wildlife agencies, researchers, restoration practitioners, and national consulting firms who implement and monitor, or collaborate with, Fish and Wildlife Program projects. For example, relationships include past employment at the US Geological Survey, Northwest Power and Conservation Council, NOAA Fisheries, US Forest Service, and US Environmental Protection Agency. We take steps to avoid introducing the appearance of conflict or bias into reviews, including the recusal of panel members on reviews of specific proposals where appropriate. For example, ISRP member Dr. William Pine works part-time for SWCA Environmental Consultants, a nationwide firm with 1700 employees, on projects outside the Columbia River Basin in the eastern United States. To avoid the appearance of bias, Dr. Pine was recused from reviewing or discussing the Upper Columbia United Tribes' Monitoring and Evaluation Program project because SWCA Environmental Consultants design and conduct monitoring and reporting for the project.

ISRP INDEPENDENT SCIENTIFIC REVIEW PANEL

FOR THE NORTHWEST POWER AND CONSERVATION COUNCIL PORTLAND · NWCOUNCIL.ORG/ISRP

ISRP Review and Guidance for Projects in the Columbia River Basin Fish and Wildlife Program 2026 Lands Project Review

Contents

Table 1. List of 13 Projects Considered by the ISRP in the Lands Review and Links to Review and Background Documents

Project # & CBFish link	Title	Proponent Orgs	2026 materials	Past ISRP comments
Full Review				
2008-007-00	Upper Columbia United Tribes (UCUT) Monitoring and Evaluation (M&E) Program	Upper Columbia United Tribes (UCUT)	Folder	past reviews
Set 1 – Guidance on Objectives				
1990-092-00	Wanaket Wildlife Area	Umatilla Confederated Tribes (CTUIR)	Folder	past reviews
1995-060-01	Isqúulktpe Watershed Project	CTUIR	Folder	past reviews
2000-026-00	Tat'win Wildlife Area Operations	CTUIR	Folder	past reviews
1998-022-00	Pine Creek Conservation Area	Confederated Tribes of Warm Springs (CTWS)	Folder	past reviews
2000-015-00	Upper John Day Conservation Lands Program	CTWS	Folder	past reviews
2006-005-00	Asotin Creek Wildlife Mitigation	Washington Department of Fish and Wildlife (WDFW)	Folder	past reviews
2008-102-00	Upper Columbia Land Operation and Maintenance	Colville Confederated Tribes	Folder	past reviews
Set 2 – Guidance on General Project Implementation				
1996-094-01	Scotch Creek Wildlife Mitigation	WDFW	Folder	past reviews
2003-012-00	Shillapoo Wildlife Mitigation	WDFW	Folder	past reviews
1992-061-05	Albeni Falls Wildlife Mitigation-Kootenai Tribe	Kootenai Tribe	Folder	past reviews
1995-057-03	Southern Idaho Wildlife Mitigation–Shoshone-Paiute Tribes	Shoshone-Paiute Tribes	Folder	past reviews
1995-057-02	Shoshone-Bannock Wildlife Mitigation Projects	Shoshone-Bannock Tribes	Folder	past reviews

ISRP Review and Guidance for Projects in the Columbia River Basin Fish and Wildlife Program 2026 Lands Project Review

Executive Summary

This report is the ISRP's contribution to the Northwest Power and Conservation Council's 2026 Lands Project Review for the Columbia River Basin Fish and Wildlife Program. The Council developed this review process to be a tailored, check-in review of projects that have been reviewed many times and their basic premise and scientific soundness have been accepted by the Council. Consequently, the scope of this ISRP review is different than past ISRP multi-project, category reviews. Rather than a review of the 28 projects included in the Council's review, the Council asked the ISRP to 1) fully review for its scientific merits the Upper Columbia United Tribes (UCUT) Monitoring and Evaluation (M&E) Program (UWMEP) and 2) provide guidance on a subset of 12 projects, for which the project proponents requested input. The Council did not request additional ISRP review for individual O&M projects for the stated reason that "they have been reviewed in the past and additional review is not necessary at this time." The ISRP's review comments and guidance are focused on improving project planning, implementation, and evaluation, in the context of the primary goal of these projects to maintain and restore habitat protected through land acquisition and conservation easements.

To address the Council's request, we organized this report in four sections: 1) review background and ISRP process, 2) programmatic comments, 3) scientific review of the UWMEP project, and 4) guidance for the 12 projects that requested ISRP input. Brief summaries of key points from the four sections are provided below.

I. Review Background and ISRP Process

Unlike our standard reviews for which we have a decades-long, established process, there was an element of learning-by-doing for this Lands Review to develop a review process focused on improving project design and implementation. One important element of past reviews missing from the current process was information sharing and open dialogue through a project presentation meeting involving all projects in the Council's review. We believe some form of project review and guidance meetings should be a component of future reviews.

II. Programmatic Comments

The ISRP provides six programmatic comments that apply broadly across projects.

1. The Need for Quantitative Objectives

Clearly articulated objectives can help guide monitoring, prioritize management actions, assist with evaluating effectiveness, and improve transparency across wildlife mitigation programs. We provide general guidance and an accompanying sidebar on the development of quantitative and timebound (SMART) objectives.

2. Monitoring, Evaluation, and Adaptive Management

The ISRP encourages project proponents to develop clear conceptual models linking restoration actions to expected ecological responses, establish thresholds or trigger points for management adjustment, and improve documentation of how monitoring results influence subsequent management decisions. Given funding constraints, scalable approaches that prioritize a small number of ecologically meaningful indicators may be more practical and informative than large collections of loosely integrated metrics.

3. Emerging Opportunities for Regional Monitoring and Shared Technical Infrastructure

Several projects reviewed during this cycle demonstrate substantial progress in development of coordinated monitoring infrastructure and emerging technologies that may have broad applicability across Lands Program projects. Because cost, scalability, and comparability remain issues, we identify several emerging technologies that could be beneficial, including UAS (drone), eDNA, and remote sensing approaches.

4. Dynamic Landscapes: Invasive Species, Wildfire Risk, and Climate Resilience

The ISRP encourages projects to increasingly frame management objectives around ecological resilience, strategic containment of invasives, protection of high-value habitats, and reduction of wildfire risk. Regional collaboration and community engagement could help alleviate resource shortfalls by capitalizing on economy of scale, and improve prioritization of habitat treatments, and monitoring treatment effectiveness.

5. Consistency in Reporting and Updates of Management Plans

The ISRP noted inconsistencies among management plans, annual reports, project summaries, and monitoring plans across projects. We encourage projects to maintain updated management plans, more clearly align Statements of Work with management plan objectives, and ensure consistency among annual reporting, implementation actions, and long-term ecological goals.

6. Workshops and Collaborative Technical Exchanges

The high degree of overlap among project requests for guidance suggests strong opportunities for collaborative workshops and technical exchanges among project

proponents, the ISRP, BPA, Council staff, and regional technical experts. The ISRP believes collaboration, peer-to-peer learning, and exchange among practitioners could substantially improve consistency, technical capacity, and long-term effectiveness across the Columbia Basin wildlife mitigation program.

III. Scientific Review of the UWMEP Project

The Upper Columbia United Tribes (UCUT) Monitoring and Evaluation (M&E) Program (Project #2008-007-00) provides monitoring and evaluation for the five UCUT member tribes to inform restoration and land management actions on wildlife mitigation lands in the upper Columbia, including the Columbia River mainstem and the Okanagan, Spokane, Pend Oreille, Coeur d'Alene, and Kootenai river basins. For the review, we evaluated project documents provided by the Council and UCUT, and we met online with UCUT staff to learn more about their project and discuss progress since the last Council and ISRP review of the project in 2018. Based on a review of this information, the ISRP's recommends the project "meets scientific review criteria," and we offer suggestions for improvements.

The ISRP finds the UWMEP approach is an excellent and scientifically sound framework for monitoring wildlife lands projects. The project has addressed concerns raised in the 2018 ISRP review and is fulfilling its mission of providing data and results that inform how restoration is progressing regionally, as well as providing actionable data to the individual Tribes for their planning of habitat management activities. As with any complex monitoring program that has multiple users, all of the project implementation steps from study design to data collection to evaluation and reporting have room for improvement, and the ISRP offers suggestion for improvement, recognizing constraints imposed by the limited availability of funds. Overall, the UCUT have developed a regional monitoring approach that could be used as an example for other Columbia Basin wildlife mitigation lands programs.

IV. Guidance for the 12 Projects Requesting Input from the ISRP

We appreciate the project proponents' interest in seeking input to improve their projects. We suggest that project proponents not only read the guidance provided for their project but also read remarks for other projects in the set because our comments often highlight strengths of projects and potential examples of project proponents' approaches that could apply more broadly to help improve other projects.

The ISRP recognizes the inherent value of the Lands Program and ongoing management for the benefit of mitigation and restoration of key habitats. We also recognize the challenges faced by proponents given resource constraints and a rapidly changing environment with enhanced risks from wildfire, drought, and invasive species. Our comments are meant to be constructive and sensitive to those challenges.

ISRP Review and Guidance for Projects in the Columbia River Basin Fish and Wildlife Program 2026 Lands Project Review

I. Review Background and ISRP Process

This report is the ISRP's contribution to the Northwest Power and Conservation Council's 2026 Lands Project Review for the Columbia River Basin Fish and Wildlife Program. The scope of this ISRP review is different than past ISRP multi-project, category reviews. Rather than a review of all the projects included in the Council's review, the Council asked the ISRP to review and provide guidance on a subset of projects. The ISRP's review comments and guidance are focused on improving project planning, implementation, and evaluation, in the context of the primary goal of these projects to maintain and restore habitat protected through land acquisition and conservation easements.

On November 6, 2025, the Council initiated the Lands Review process with a guidance letter to the project proponents. The letter includes basic background information on the Lands Review process, review steps, and schedule. The letter emphasizes that the current process is a tailored, check-in review of projects that have been reviewed many times and their basic premise and scientific soundness have been accepted by the Council. As part of the process, the Council is collecting information regarding tracking Program performance and details related to land acquisitions (e.g., individual parcel polygon data, associated land management plans, number of acres, and such, if appropriate and available). The letter lists the 35 projects funded by Bonneville Power Administration through the Fish & Wildlife Program that protect habitat through land acquisitions and conservation easements, including those projects that provide administrative or monitoring and evaluation support.

- Twenty-eight of these projects are ongoing, have been reviewed by the ISRP multiple times in the past, and are being reviewed by the Council during this cycle. The Council staff developed individually tailored questions and information requests for each of these 28 projects and asked for materials to be submitted by February 13, 2026. In developing the questions, the Council staff considered existing information for each project, including project proposals and summaries, prior review documents, and other supplemental information.
- Six projects provide administrative support, are included for context, and are not being reviewed by the Council (or the ISRP).

- One project, *Upland Wildlife Habitat Management* (#2024-004-00), is new, was recently reviewed by the ISRP, found to "meet scientific review criteria (conditional)" (ISRP document 2026-1; May 4, 2026), and was recommended by the Council to the Bonneville Power Administration for implementation.

In February 2026, the Council received responses to their tailored questions and other supporting documents from the 28 projects under review (see the table of project on the Council's Lands Review webpage). The Council staff then spent several weeks evaluating the materials submitted and identified a subset of 13 projects for ISRP review and guidance. On March 30, 2026, the Council sent a review request letter to the ISRP, which includes background on the Council's expectations for the ISRP's review, identifies one project for full scientific review and 12 for guidance, and emphasizes that the goal of the review process is to provide technical guidance and improve the projects. The Council did not request additional ISRP review for individual O&M projects for the stated reason that "they have been reviewed in the past and additional review is not necessary at this time."

Specifically, the Council requested:

- A full ISRP scientific review of the Upper Columbia United Tribes (UCUT) Monitoring and Evaluation (M&E) Program (UWMEP) because of the project's broad scope that includes monitoring and evaluation of restoration activities and project outcomes on mitigation lands for the five UCUT member Tribes.
- ISRP guidance for 12 projects that requested ISRP input in their responses to the Council's tailored questions for their projects. The Council staff grouped the projects into two sets: seven projects generally interested in ISRP guidance on refining quantitative objectives and five projects interested in guidance on general project implementation.

To address the Council's request, we organized this report in four sections: 1) background, 2) programmatic comments, 3) scientific review of the UWMEP project, and 4) guidance on the 12 projects that requested ISRP input.

Regarding the review process, we emphasize that the review of the UWMEP project is the only "standard" ISRP review in the set for which we evaluated the scientific merit of a project's documents using our statutory review criteria. To develop the guidance for the 12 projects, we considered information primarily on goals and objectives contained in the proponents' responses to the Council and supporting documents such as land management plans, but we did not evaluate those documents to determine the overall scientific merit of the projects. We appreciated briefings from the Council staff to orient

us to the new review process, share their expectations for our review role, and provide context on the history of lands projects and the wildlife component of the F&W Program.[1]

Unlike our standard reviews for which we have a decades-long, established process, there was an element of learning-by-doing for this Lands Review because of our new guidance-focused charge and that six new members joined five continuing members in April 2026, well into the Council's review process. To provide constructive and informed guidance, we needed to rely on more supplemental documents than in past category reviews and looked beyond the primary submittal, which in this case was the project proponents' responses to the Council's tailored questions. Overall, we were able to work through these minor challenges and appreciated developing a review process focused on steps to improve project design and implementation. We look forward to debriefing with Council staff on the review process to inform the next set of project reviews.

One important element of past reviews missing from the current process was information sharing and open dialogue through a project presentation meeting involving all projects in the Council's review. Dialogue remains essential considering long intervals between project reviews (e.g., nine years, 2017-2026, since our last Wildlife Projects Review); participation by new project proponents, Council staff, and ISRP members who did not participate in the 2017 review; and development of emerging and economical monitoring and restoration methods. In our programmatic comments below, we suggest that organizing workshops would be beneficial to share information among Council staff, the project proponents in the Lands Review, and the ISRP. Moreover, we believe some form of project review and guidance meetings should be a component of future reviews.

The ISRP recognizes the inherent value of the Lands Program and ongoing management for the benefit of mitigation and restoration of key habitats. We also recognize the challenges faced by proponents given resource constraints and a rapidly changing environment with enhanced risks from wildfire, drought, and invasive species. Our comments are meant to be constructive and sensitive to those challenges.

[1] For example, the following resources provided useful context: Fish and Wildlife Program Categorical Assessment, 1980-2022: Wildlife Mitigation (November 2024), A Retrospective of the Council's Fish and Wildlife Program, 1980-2022 (March 2024), and the Council's web-based Program Tracker for Mitigation – Wildlife and Fish lands.

II. Programmatic Comments

These programmatic comments were informed by recurring themes identified throughout the 2026 Lands Review draft materials and associated project guidance requests. They also build directly upon prior ISRP programmatic guidance concerning quantitative objectives, monitoring and evaluation, adaptive management, and regional collaboration articulated in the 2017 Wildlife Project Review (ISRP 2017-7).

1. The Need for Quantitative Objectives

An important theme that emerged from the 2026 Lands Review is the widespread need for clearer, more quantitative, and more operationally explicit objectives across wildlife mitigation lands projects. Strengthening this linkage would help to clarify and prioritize the actions being implemented, ecological responses expected, how progress will be evaluated, and what management adjustments would be considered if outcomes differ from expectations. Nearly all projects that requested guidance from the ISRP sought input on developing quantitative management objectives, measurable performance metrics, or stronger linkages between restoration actions and ecological outcomes. We recognize that many wildlife mitigation projects were historically developed under frameworks emphasizing land acquisition, habitat protection, operational mitigation, or habitat unit accounting rather than explicit ecological performance monitoring. As a result, many projects contain implementation and management objectives but comparatively fewer measurable implementation and ecological outcome objectives tied to timelines, thresholds, or adaptive management decision pathways.

Comments and guidance provided in this 2026 Lands Review closely parallel programmatic comments in the 2017 Wildlife Project Review that emphasized the importance of time-specific, quantifiable objectives as foundational elements of adaptive management. The current review indicates that substantial progress has occurred in many projects with respect to operational management, invasive species treatment, habitat restoration, and monitoring infrastructure. However, projects continue to vary widely in their development of formal adaptive management frameworks capable of evaluating effectiveness of restoration actions relative to desired ecological outcomes.

The ISRP reiterates that quantitative objectives generally fall into complementary categories: (1) implementation objectives that quantify management actions or accomplishments; (2) ecological outcome objectives that quantify expected habitat or biological responses (see Sidebar text box); and (3) decision criteria that identify how results will be interpreted and what decisions could change as a result.

Management actions are evaluated using implementation and compliance monitoring, which is conducted and reported by all the lands projects, for example, through milestone and metrics reporting in BPA's project tracking database, CBFish.org. Evaluation of progress toward achieving ecological objectives is complicated by funding availability and associated technical capacity of projects coupled with scientific uncertainty about biological responses to restoration actions. Although monitoring and evaluation of ecological outcomes may be limited, the ISRP believes that developing quantitative objectives, including ecological outcomes, provides a useful framework for planning and designing projects and applying adaptive management. Additionally, identifying quantitative objectives can help direct limited funds to the most critical monitoring and provide a basis for exploring potential economical monitoring approaches that are emerging with advances in innovative assessment and monitoring technologies; see the programmatic comments below on M&E, adaptive management, and promising technologies. Monitoring priorities should be guided by the value of information to support management decisions, and projects should identify the minimum set of indicators or metrics needed to evaluate whether restoration actions are producing desired ecological responses and whether management actions should continue as designed, be modified, or end.

Sidebar. Developing SMART Ecological Objectives

This sidebar provides brief guidance applicable to all projects to assist in updating land management plans and other project documents to include SMART objectives. In addition, we provide specific feedback in comments to the individual project proponents in the section below, *Guidance to the 12 projects that requested input from the ISRP*. We also suggest that a workshop on developing SMART objectives would be beneficial to inform updating land management plans and other project documents. An important component of such a workshop would be to discuss and identify with project proponents what are their key goals, issues, and barriers in developing quantitative, time-bound objectives. For more details, see below, programmatic comment *6. Workshops and Collaborative Technical Exchanges*.

SMART ecological objectives are:

- *Specific* – clearly defined and identify what ecological feature or process is being managed
- *Measurable* – include quantitative indicators or metrics
- *Achievable* (*or Attainable*) – testable and reflect realistic ecological potential and operational capacity
- *Relevant* – applicable to the F&W Program with benefits to fish and wildlife and align with mitigation goals, ecological priorities, and tribal or regional values

- *Timebound* – specify clear milestones and end dates including evaluation periods or timelines for achievement

The ISRP's previous review of wildlife lands projects in 2017 found that 90% of the projects needed time-specific, quantitative objectives (ISRP 2017-7) and recommended that the project documents (e.g., land management plans) be updated to include refined objectives. Following the 2017 review, the ISRP recognized the need to provide additional guidance to project proponents on developing time-specific, quantitative SMART objectives. The ISRP revised the project proposal form and included specific questions and guidance on developing goals and objectives (see Online Appendix 1). As part of our review process for the 2019-2020 Category Review of Resident Fish and Sturgeon Projects (ISRP 2020-8), we held proposal development workshops highlighting development of SMART objectives and took the extra step to provide guidance to project proponents who wanted feedback on their draft objectives to inform their final proposals without jeopardizing our ultimate review role. Overall, the effort improved the objectives (see ISRP 2020-8, pages 2 and 3). The wildlife lands project proponents are not likely aware of the ISRP guidance provided in the proposal form and related workshops, and thus we include Online Appendix 1 for reference and expand on our previous guidance below based on our observations from this 2026 Lands Review process.

Individual reviews suggest that many projects already possess strong foundations for SMART objective development. Strengths include long-term vegetation monitoring, GIS-based invasive species inventories, reference-condition frameworks, explicit statements or tables noting desired future conditions, photo-point monitoring, wildlife surveys, and coordinated habitat assessment programs. The challenge is often not absence of information but rather integrating these elements into explicit adaptive management frameworks linking restoration actions to ecological outcomes.

Distinguishing Implementation Objectives from Ecological Objectives

Another recurring issue identified during review was the distinction between implementation objectives and ecological response objectives. *Implementation objective metrics* quantify management actions, such as acres treated, fences maintained, area surveyed, structures installed, or invasive species treatments completed. These are important for accountability and operational tracking. *Ecological response objective metrics* instead are used to evaluate whether management actions are producing desired ecological outcomes, such as increased native perennial grass cover, improved riparian condition, reduced invasive annual grass dominance, increased nesting success, improved habitat connectivity, or increased floodplain function. Ecological response objectives can distinguish between whether the action changed the habitat conditions, and whether those habitat changes produced the desired biological response. Project proponents are encouraged to include both implementation objectives and ecological response objectives when updating management plans. Also see Online Appendix 1, including Figure 2, for general guidance on distinguishing and developing quantitative implementation objectives and quantitative biological, physical, or social objectives.

Practical Guidance for Developing SMART Objectives

The ISRP recommends that projects focus on a relatively small number of ecologically meaningful metrics or indicators that are scientifically defensible, operationally feasible, scalable across time and space, and directly linked to management decisions. A few specific examples from individual project reviews are:

- Reduce invasive annual grass cover (%) within priority riparian protection zones over five years.
- Increase native shrub survival (%) within treated restoration units within three growing seasons.
- Maintain stream temperature below identified thermal thresholds during summer baseflow periods.
- Increase proportion of native perennial grass cover within priority upland habitat management units over ten years.

For adaptive management, each objective should also be linked to the management action being evaluated, the monitoring information needed to assess progress, and the decision that could change based on the results. The ISRP notes that development of fully quantitative targets may not always be feasible or desirable, especially in highly dynamic ecosystems affected by climate change, altered disturbance (e.g., wildfire, drought) regimes, or invasive species expansion. In such cases, objectives emphasizing ecological resilience, containment, directional improvement, or protection of high-value habitats may be more appropriate than rigid restoration targets.

SMART Objectives inform Adaptive Management

SMART objectives are most useful when they are tied to specific management decisions, rather than as standalone planning statements. To support adaptive management, objectives should identify the expected ecological response, monitoring indicators or metrics used to measure progress, and the decision points that determine whether the management actions continue or are changed. Clearly articulated objectives can help guide monitoring, prioritize management actions, assist with evaluating effectiveness, and improve transparency across wildlife mitigation programs.

2. Monitoring, Evaluation, and Adaptive Management

A second important theme is the need to strengthen formal connections among monitoring, evaluation, and adaptive management efforts across wildlife mitigation lands projects. There was substantial variability among projects in monitoring intensity, analytical sophistication, integration of habitat and species response monitoring, and documentation of how monitoring results inform management decisions. For example, many projects conduct extensive field monitoring activities, including vegetation surveys, photo points, invasive species inventories, stream temperature monitoring, breeding bird surveys, wildlife

observations, and habitat assessments. However, in several cases it remains unclear how these data are synthesized into formal evaluations of restoration effectiveness or incorporated into adaptive management decision-making. For adaptive management to be effective, monitoring data should be evaluated against expected responses and the stated decision criteria, so that project proponents can determine whether the management action should be changed (or stopped). This issue was similarly emphasized in past reviews that noted that adaptive management was often not yet implemented in sufficiently formal ways to document progress toward desired ecological conditions and improve management outcomes. Many projects have made important progress since that time, particularly in monitoring infrastructure and operational implementation, but similar programmatic challenges remain.

The ISRP encourages project proponents to more explicitly distinguish status and trend monitoring, restoration effectiveness monitoring, and adaptive management-oriented monitoring.[2] While these categories overlap, they serve different functions and may require different analytical approaches. Monitoring designed to inform adaptive management should prioritize explanatory variables directly linked to management actions and ecological processes that can be influenced through restoration activities. The ISRP further encourages project proponents to develop clear conceptual models linking restoration actions to expected ecological responses, establish thresholds or trigger points for management adjustment, and improve documentation of how monitoring results influence subsequent management decisions.

Implementation of fully developed adaptive management frameworks may exceed the technical capacity or funding available to some projects, as noted above. Consequently, scalable approaches that prioritize a smaller number of ecologically meaningful indicators may often be more practical and more informative than large collections of loosely integrated metrics.

3. Emerging Opportunities for Regional Monitoring and Shared Technical Infrastructure

Several projects reviewed during this cycle demonstrate substantial progress in development of coordinated monitoring infrastructure and emerging technologies that may have broad applicability across Lands Program projects. The ISRP views these developments as promising opportunities for improving spatial coverage, reducing observer variability, improving long-term data consistency, and strengthening adaptive management capacity. Because cost, scalability, and comparability remain issues, we discussed implementation of

[2] See the *Columbia Basin Tributary Habitat RM&E Strategy* for descriptions of monitoring approaches to evaluate habitat restoration focused on salmon and steelhead mitigation and recovery (BPA/BOR 2022).

new technologies that could explicitly address these problems. Particularly promising opportunities include:

- low-elevation UAS (drone) monitoring for invasive annual grass mapping and wildfire risk assessment
- eDNA applications for aquatic and terrestrial species detection (see Elmore et al. 2024, Grossklaus et al. 2026)
- remote sensing approaches for tracking vegetation change and treatment effectiveness
- regional data integration frameworks capable of supporting both project-level and larger-scale (e.g., watershed scale) assessments

These technologies will be most useful when they are selected to answer specific management questions, reduce uncertainties that limit decision making, or provide the monitoring data needed to inform cost-effective decision making. The Upper Columbia United Tribes Wildlife Monitoring and Evaluation Program (UWMEP) is a compelling example of coordinated regional monitoring infrastructure that may provide a useful model for other groups. The UWMEP's standardized vegetation and vertebrate monitoring framework demonstrates how repeated sampling across multiple projects may help improve consistency and allow evaluation of broader ecological trends. However, the ISRP notes that regional monitoring efforts do not eliminate the need for project-scale monitoring designed to evaluate local restoration effectiveness and support adaptive management decisions.

The ISRP encourages continued exploration of opportunities for standardized monitoring protocols, shared analytical tools, collaborative technical training, and regional synthesis reporting across wildlife mitigation projects. Collaborative approaches are likely to improve both scientific rigor and cost effectiveness.

4. Dynamic landscapes: Invasive Species, Wildfire Risk, and Climate Resilience

Invasive species management emerged as one of the most consistent ecological challenges identified across projects in the 2026 Lands Review. Particularly important concerns include expansion of invasive annual grasses such as ventenata and medusahead, continued spread of yellow starthistle and knapweed, and interactions among invasive species, altered fire regimes, and climate change. Several projects reported increasing difficulty restoring native perennial grasslands under current climatic and ecological conditions. In some areas, widespread invasive grass dominance and altered fire cycles may limit feasibility of full restoration to historical vegetation conditions across entire landscapes. Projects may need different goals in these types of settings. For example, some projects may focus on

restoration where it is possible or work to contain invasive species where restoration is not possible.

In these cases, the ISRP encourages projects to increasingly frame management objectives around ecological resilience, strategic containment, protection of high-value habitats, and reduction of wildfire risk. For these objectives to support adaptive management, proponents should define what resilience, strategic containment, or risk reduction means in measurable terms and how monitoring would inform future actions.

Apart from upland forested habitat, priority areas for protection may include riparian corridors, remaining native perennial grasslands, wetlands, culturally important habitats, and natural or managed fire breaks. The ISRP also encourages project proponents to strengthen treatment-effectiveness monitoring and improve evaluation of alternative management approaches including herbicide application, reseeding, grazing exclusion, prescribed fire, thinning, and integrated revegetation approaches.

The ISRP notes substantial opportunities for regional collaboration (e.g., UWMEP) on invasive species monitoring, wildfire resilience planning, and development of practical grassland monitoring metrics. There may be additional opportunities for local community engagement and involvement in coordinated activities like citizen science programs (e.g., iNaturalist), volunteer restoration projects (e.g., weed control), and recreational stewardship activities like "adopt-a-trail." Regional collaboration and community engagement could help alleviate resource shortfalls by capitalizing on economy of scale, improving prioritization of treatments, and monitoring treatment effectiveness.

5. Consistency in Reporting and Updates of Land Management Plans

Another issue identified during the current review concerns inconsistencies among land management plans, annual reports, project summaries, and monitoring plans across projects. Several projects currently operate under management plans that are decades old, remain in draft status, or do not fully reflect current project activities. In some cases, multiple partially overlapping plans govern different portions of project activities, making it difficult to determine which objectives or actions represent the primary operational framework.

The ISRP encourages projects to maintain updated management plans, more clearly align Statements of Work with management plan objectives, and ensure consistency among annual reporting, implementation actions, and long-term ecological goals. While the current Statement of Work entries due annually to BPA help track a project's progress and near-tern plans, they do not offer enough detail to thoroughly evaluate a project's direction, goals, objectives, and longer-term successes and shortcomings. The ISRP encourages development of clearer expectations regarding frequency of management plan revision, procedures for

transitioning draft plans to finalized status, and mechanisms for incorporating adaptive management findings into revised plans and implementation actions. Updated management plans should serve as living documents that record the objectives, management actions, monitoring results, changes implemented, and what was learned from the resulting response. Better integration among project documents would substantially strengthen transparency, accountability, and long-term adaptive management capacity.

6. Workshops and Collaborative Technical Exchanges

The high degree of overlap among project requests for guidance suggests strong opportunities for collaborative workshops and technical exchanges among project proponents, the ISRP, BPA, Council staff, and regional technical experts. Several workshop themes emerged repeatedly across projects:

- Developing SMART ecological objectives
- Monitoring and adaptive management
- Invasive species management and wildfire resilience
- Emerging monitoring technologies
- Reference conditions and desired future conditions

Collaborative workshops could substantially accelerate development of practical adaptive management approaches while allowing project proponents to share successful strategies, monitoring tools, analytical approaches, and implementation experiences. Workshop topics could include translating broad goals into measurable ecological objectives, use of emerging technologies to develop practical and scalable monitoring frameworks, integrating species response monitoring with habitat restoration, and establishing adaptive management trigger points and decision pathways. Of special importance to many projects is identifying low-cost alternatives that procure meaningful and useful results. Several projects reviewed during this cycle could serve as useful case studies because they already possess advanced monitoring infrastructure or innovative management frameworks, including projects implementing reference-condition approaches, integrated GIS systems, regional monitoring programs, or culturally-grounded restoration frameworks such as CTUIR's First Foods approach (see Quaempts et al. 2018).

The ISRP believes collaboration, peer-to-peer learning, and exchange among practitioners could substantially improve consistency, technical capacity, and long-term effectiveness across the Columbia Basin wildlife mitigation program.

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III. Review of Upper Columbia United Tribes Monitoring and Evaluation Program (Project #2008-007-00)

Background

As part of the 2026 Lands Review, the Council asked the ISRP to conduct a standard (full) review of Upper Columbia United Tribes (UCUT) Monitoring and Evaluation (M&E) Program (Project #2008-007-00, referred to as UWMEP) (see March 30, 2026, Council letter to ISRP).

In 2008, the five UCUT member Tribes initiated the project by pooling five percent of their individual contract resources to support a regional perspective to wildlife lands monitoring and evaluation in the upper Columbia River, including the Columbia River mainstem and the Okanagan, Spokane, Pend Oreille, Coeur d'Alene, and Kootenai river basins. The project provides monitoring and evaluation to inform restoration and land management actions on wildlife mitigation lands for the five UCUT member tribes. Monitoring data is used to compare the condition of managed lands to reference sites that represent a desired future condition for the following wildlife lands projects:

- Albeni Falls Wildlife Mitigation – Kalispel Tribe (BPA project #1992-061-02)
- Albeni Falls Wildlife Mitigation – Kootenai Tribe (1992-061-05)
- Albeni Falls Wildlife Mitigation – Coeur D'Alene Tribe (1992-061-06)
- Hellsgate Big Game Winter Range – Colville Confederated Tribes (1992-048-00)
- Wildlife Mitigation/Operations and Maintenance (O&M) for Spokane Tribe Land Acquisitions (1998-003-00)

The ISRP has reviewed this project several times over the past 17 years. The most recent ISRP review of the project was a 2018 follow-up review to the 2017 Wildlife Category Review (ISRP document 2018-7). The 2018 follow-up review included a UCUT and ISRP response dialogue and a final ISRP recommendation of "meets scientific review criteria (qualified)."

The ISRP recognizes the strong scientific basis for the UWMEP and has cited UWMEP as an exemplary project in other ISRP reviews. Further, in 2018, the Council accepted the UCUT's responses regarding what they planned to do in response to the ISRP's review (NPCC 2018). Consequently, our review is organized into two sections to fulfill the charge of performing a standard review and to maintain continuity with the 2018 review.

The two sections are:

A. Four questions guide our review. The first two are consistent with our scientific review criteria and typical of those designed to focus standard ISRP reviews regarding the scientific underpinning of a project. The third question recognizes the potential of the

UWMEP approach to apply to other lands projects. The fourth question is a request from UCUT for suggestions for developing interim success criteria.

The questions are:

1. What are the strengths of their study design and methods and what suggestions do we have for improvement?
2. Overall, are the project's results adequate and useful for informing the habitat management objectives of the set of UCUT wildlife lands projects?
3. Is the UWMEP approach a good framework for other sets of wildlife lands projects?
4. Specifically, do we have suggestions to aid their effort to develop interim success criteria to capture successional communities that may be trending towards the reference conditions?

B. A check-in with the UCUT (using up-to-date information on UCUT's methods, analyses, and results) on the ISRP 2017/2018 review comments to evaluate if and how the UCUT have progressed in implementing the changes stated in the UCUT responses to the 2017 ISRP review.

To conduct this review, we evaluated the initial UWMEP documents provided to the Council for the Lands Review and the supplemental UWMEP documents provided to us based on information requests identified in our preliminary evaluation of the project (see below for the list of documents used in this review). We also met online with Cody Thomas, UCUT/UWMEP Project Manager, and Laura Robinson, UCUT Executive Director, on June 8, 2026, to discuss the supplemental information and their progress on implementing actions described in the 2018 follow-up review response dialogue. On June 11, 2026, the UCUT provided written descriptions of their efforts to address the earlier 2018 ISRP follow-up review (Online Appendix 2).

Recommendation

Based on this review, the ISRP's recommendation is **"meets scientific review criteria**," and we offer suggestions for improvements.

Section A: ISRP's Responses to the Four Review Questions

1. ***What are the strengths of their study design and methods and what suggestions do we have for improvement?***

Strengths

UWMEP uses a statistically based sampling design with a reference site versus impacted (mitigation) site approach. They then apply statistical analysis methods for each habitat type that are well-suited to using the collected data to assess the progress of restoration at a regional level (spanning multiple Tribes and their widespread lands) and provide actionable information to the individual member Tribes for more localized planning and decisions. UWMEP monitors multiple ecological responses including habitat (vegetation) and vertebrates (bird and amphibian communities). Mitigation sites are compared to reference conditions that are identified for each habitat type. SWCA Environmental Consultants, the UCUT contractor implementing the UWMEP, produces annual reports (e.g., 2024, 2025a, 2026) that are well-written with clear documentation of methods. Annual reports present both regional results and results specific to each Tribe. Results are organized as "Scorecards," which appear to be a good way to communicate progress toward reference conditions and therefore restoration objectives. The "raw" data and summary tables are maintained in a database and made available to the Tribes.

SWCA (2018) initially completed a scientific review of the program and considered alternative analytical frameworks and visualizations. Through a consultative process with UCUT, SWCA now conducts most of the on-the-ground survey work, analyses, and annual report generation. This close relationship is highly advantageous. SWCA understands the limitations of the survey methods, and they appear to be sensitive to the needs and priorities of the UCUT and member Tribes.

Communication is critical to a project like UWMEP because of the multiple organizations involved. Representatives of the UCUT team and project participants meet regularly (e.g., a standing Wildlife Committee) and are in communication otherwise to ensure data collection and analyses enable regional analyses and align with the needs of the individual member Tribes. UCUT has sound and measurable restoration objectives (part of their response to the 2018 ISRP follow-up review, Online Appendix 2).

The program strives to achieve balance between consistent data collection to ensure easy-to-interpret historical analyses, while also adapting to changing environmental conditions and evolving needs of the Tribes. All of this occurs within funding constraints. Examples of changes to the monitoring that show adaptability include: (1) adding pilot testing of eDNA sampling, (2) changes to the sampling frequency and effort such as adopting a 3-year cycle

and dropping the small mammal trapping, and (3) implementing actions in response to the 2018 ISRP review (see Online Appendix 2).

Areas of Improvement to Consider

The ISRP recognizes constraints imposed by the limited availability of funds. Many of our suggestions rely on existing data. With multiple years of data available, there are some analyses that could be done relatively inexpensively. We also offer suggestions regarding Reference sites and documentation of management actions at Mitigation sites. The suggestions below would improve UWMEP, and they are offered as possible opportunities for the UCUT and the member Tribes.

Suggestion 1. More Interpretation of Broad Scale Patterns – The UWMEP results could be better leveraged to inform the habitat management activities done by the Tribes, or existing linkages between monitoring and habitat management could be better documented. Currently, the SWCA reports focus on the regional-level interpretation. As part of this, there may be value in SWCA or UCUT providing some written discussion of potential ecological processes or events—like succession, arrival of invasive species, or climate change—to better understand some of the patterns seen at mitigation sites across projects. This information would likely benefit member Tribes, helping to better gauge the impact of broader-scale processes and events related to habitat management actions of individual Tribes.

Suggestion 2. Statistical Power – Consider performing an assessment of the statistical power of the analysis, especially for the nonmetric multidimensional scaling (NMS) analysis. Power analysis is a common statistical technique to help in interpretation of statistical analyses. One can use the existing data to generate random realizations of data with known properties informed by the actual monitoring data (e.g., different types of Reference and Mitigation sites). The NMS or other methods are applied to the generated Reference and Mitigation sites data to see how well the methods correctly show agreement (and disagreement) with the corresponding Reference sites, when the truth is known. This could help refine the interpretation of differences and similarities based on the actual data collected at Reference and Mitigation sites.

Suggestion 3. Analyses to Further Inform Interpretation – Perform analyses that build upon existing analyses and take advantage of the multiple years of data now available to illustrate how to interpret the analysis. For example, one could split Reference sites and compare the two groups of Reference sites to show that the analysis would, with high confidence, consider them indistinguishable. The same can be done with the Mitigation sites. One can also expand on showing the actual measured values for Reference and Mitigation sites based on how "close" Mitigation sites are to Reference sites. An editorial note: The axes on the NMS plots

can be difficult to interpret without expanded explanation because they are combinations of measured variables.

Suggestion 4. Disaggregation of Data at Reference Sites – Examine reference sites relative to their attributes used in the Scorecards provided by SWCA. The UWMEP approach presently uses multiple but irregular sets of years when Reference sites were sampled. Data from Reference sites are then lumped together for each habitat type to estimate the range of values defined as targets for managed sites. There are some examples in the appendices to the annual monitoring reports that show data for individual years for the Reference stations, but the general treatment of Reference stations is an aggregated-over-years approach. Disaggregation of the Reference sites for a habitat type can be done by using attributes of the sites. These attributes are, for some Reference sites, available for multiple years spread out over time. For example, Reference site data can be parsed into relatively early and late successional stages (or young and old ecological "age"). Similarly, other covariates (e.g., species mix, invasive species, environmental conditions, disturbances, location) can be used to stratify the Reference sites within a habitat type. The idea is then to define ranges for subsets of the Reference sites and see how the Mitigation sites compare to the different categories of Reference sites within a habitat type.

Suggestion 5. Revisiting Reference Sites – Reference sites serve as the restoration target for the Mitigation sites, so ensuring the targets represent relatively recent conditions (e.g., reflect climate change and other effects since sampling initiation) is important. Investigate incorporating some type of systematic revisiting of the Reference sites over the next 3-5 years to document changes, succession, and progression. In some cases, Reference sites may be evolving to other habitat types. If Reference sites are treated as static and not periodically reassessed, one may risk assessing Mitigation sites relative to outdated Reference conditions that may no longer be realistic or desired to achieve. The Appendices to the annual reports are comprehensive and should be informative for each Tribe. Here and with Suggestion 4, the ISRP sees a relatively low-cost opportunity to further enhance the monitoring data and analyses through graphical and statistical analyses of the Reference sites.

Suggestion 6. Time Histories at Mitigation Sites – Develop a document – for example, using a living paper approach – describing to the extent possible, the history (timeline) of habitat management actions at Mitigation sites (and anthropogenic or natural disturbance events at Reference sites). UCUT has previously explored this with the Tribes, and it might be timely to revisit this idea, perhaps with ways to make it easier for Tribes to respond (e.g., user-friendly web-based tool, easy to add notes and text, approximate dates, etc.). An initial step could be a list, with type of on-the-ground habitat management activity, start and end dates, and location (latitude and longitude).

Suggestion 7. Archiving eDNA Samples – Develop and implement an archival system for the eDNA samples.

2. ***Overall, are the project's results adequate and useful for informing the habitat management objectives of the set of UCUT wildlife lands projects?***

The ISRP finds the UWMEP project to be fulfilling its mission of providing data and results that inform how restoration is progressing regionally, as well as providing actionable data to the individual Tribes for their planning of habitat management activities. With the assumption that the series of Annual Reports will continue to be produced and that adaptive management will continue to be prioritized, a good path has been set to serve the information needs with a scientifically sound approach.

Tribes that participate in UWMEP offered the following comments about the UWMEP-generated data and analyses in their response to the survey from the Council. Four Tribes replied that they worked with and/or used the data from the UWMEP. We note that the fifth Tribe, the Kootenai Tribe (Albeni Falls Wildlife Mitigation-Kootenai Tribe, Project #1992 061-05) has opted to collect their own data (except for amphibians, for which they use the UWMEP monitoring data). The reasons provided by the Kootenai Tribe were wanting to tailor indicator species selection to their sites and to continue their many years-long monitoring program. The Kootenai in their response to the Council further commented that this creates an opportunity to compare monitoring results between the two programs. The ISRP urges the UCUT (and Kootenai) to leverage this opportunity and collaborate on an initial exploratory analysis comparing the results of the two monitoring programs, noting the Kootenai Tribe has a long history of site-focused data collection. This has potential to be a "win-win" for both the UCUT, the Kootenai, the other four tribes, and the applicability of the UWMEP approach being applied elsewhere.

The final section in each of the latest SWCA annual reports (2023, 2024, 2025) is titled "Next Steps," and the section provides important details of adaptive management ideas and describes deviations from the monitoring methods set forth in SWCA (2018). These assertions are considered highly valuable. Other examples were provided in the UCUT response to Comment 2 of the 2018 ISRP review (Online Appendix 2). The ISRP encourages additional documentation and description of uses of the UWMEP effort to inform adaptive management, including how the data were used, why any management changes were made, and how performance has progressed. This would greatly help with future monitoring and provide benefits to other projects based on SWCA and UCUT experiences.

3. ***Is the UWMEP approach a good framework for other sets of wildlife lands projects?***

The UWMEP approach is an excellent and scientifically sound framework for monitoring wildlife lands projects. In its present form, the sampling design, analyses, delivery of data to individual Tribes, and mechanisms for communication of the results and with the tribes

appear effective. As with any complex monitoring program that has multiple users, all of these steps have room for improvement, but in general, the approach is exemplary. Facilitating transfer of lessons learned to other entities and wildlife managers would enable strong regional M&E projects to be developed for other systems. Among others, a key consideration in the adoption of a UWMEP-like approach is how to optimally select Reference and Mitigation sites within the various habitat types. How the approach leverages the combined funds so that the results are more than what would be obtained with five independent monitoring efforts should be documented for those striving for a similar cost-effective approach.

4. ***Specifically, do we have suggestions to aid their effort to develop interim success criteria to capture successional communities that may be trending towards the reference conditions?***

Presently, the analyses allow for tracking the time evolution of Mitigation sites relative to a fixed view of Reference sites that are all considered equal. The ISRP found a few instances when the year-specific results for Reference sites were reported (e.g., Tables M-3 and O-3 in 2023 Annual Monitoring Report, Table B-3 in the 2024 Annual Monitoring Report); however, most analyses used aggregated Reference site data. Yet, vegetation and biota show a time progression of ecological development over years to decades. Ways to assign "ages" to Reference and Mitigation sites based on their features and attributes should be explored. This would then assess whether Mitigation sites, even if not within Reference values, are on a good trajectory towards the final community defined by the Reference sites. The ISRP also suggests exploring how to quantify the rate of progress of Mitigation sites towards Reference sites; it will require some creative thinking for how best to do this.

Section B: Check-in on UWMEP's Implementation of Actions Described by UCUT for the Council's and ISRP's 2018 Follow-up Review

The UCUT documented what they have done to address comments since their initial 2018 responses to the ISRP's 2017 review, including providing an update to each of the 2018 ISRP comments (Online Appendix 2). At the time UCUT prepared their responses in 2018, many of their responses to ISRP comments were plans on what they can do, and that has now been updated to what has been achieved. The ISRP acknowledges the high degree of responsiveness of the UCUT in addressing the 2018 comments to the extent that is practical and feasible with funding constraints. Based on these new comments from the UCUT to the 2018 review, the ISRP believes the UCUT have adequately followed through on their plans to address issues described in the 2018 follow-up review.

List of documents used in ISRP review of UWMEP

Organized by date, starting with most recent.

- UCUT. 2026. UCUT summary responses to the Council information request for 2026 Lands Review (2008-007-00_Sponsor Response.docx), March 2026. (Link)
- SWCA. 2026. Upper Columbia United Tribes Wildlife Monitoring and Evaluation Program (UWMEP) 2025 Annual Monitoring Report: Confederated Tribes of the Colville Reservation, January 2026. (Link)
- SWCA. 2025b. UCUT Wildlife Monitoring and Evaluation Program: Field Methods Manual. SWCA Project No. 52337, December 2025. (Link)
- SWCA. 2025a. Upper Columbia United Tribes Wildlife Monitoring and Evaluation Program (UWMEP) 2024 Annual Monitoring Report: Coeur d'Alene Tribe of Indians and Spokane Tribe of Indians, February 2025. (Link)
- SWCA. 2024. Upper Columbia United Tribes Wildlife Monitoring and Evaluation Program 2023 Annual Monitoring Report: Kalispel Tribe of Indians, Kootenai Tribe of Idaho, and Pend Oreille Public Utility District, February 2024. (Link)
- SWCA. 2019. Restoration Success Criteria Stakeholder Meeting Outcomes and Next Steps: 2019 Restoration success criteria development for the Upper Columbia United Tribes (UCUT) Wildlife Monitoring and Evaluation Program (UWMEP) / SWCA Project No. 52337. SWCA memo to the UCUT, February 4, 2019. (Link)
- SWCA. 2018. Summary report: Upper Columbia United Tribes Wildlife Monitoring and Evaluation Program (UWMEP) Assessment and Analysis. Prepared for Upper Columbia United Tribes by SWCA Environmental Consultants. SWCA Project No. 49952, July 2018. (Link)
- NPCC. 2018. Council Follow-up Review Email Message, September 26, 2018, from Mark Fritsch, Council Staff, to Marc Gauthier, UCUT, and Virgil Watts, BPA. (Link)
- ISRP. 2018. Follow-up Review of the Upper Columbia United Tribes' Monitoring and Evaluation Program (#2008-007-00). ISRP 2018-7, September 7, 2018. (Link).

  This 2018 ISRP follow-up review incorporates and addresses:

  - Upper Columbia United Tribes Response to the Independent Scientific Review Panel Review of the UCUT Wildlife Evaluation and Monitoring Program – 2018 (link)

- ISRP Final 2017 Wildlife Project Review, ISRP 2017-7, June 28, 2017 (pages 22-26)
- 2017 Wildlife Project Review – Written Project Summary. Upper Columbia United Tribes (UCUT) Wildlife Monitoring and Evaluation Program (UWMEP) Project Number 2008-007-00 (link)

IV. Guidance for the 12 Projects Requesting Input from the ISRP

As noted in this report's *Review Background and ISRP Process* section, we primarily considered information on goals and objectives contained in the proponents' responses to the Council (referred to below as "2026 Summary to NPCC") and supporting documents such as land management plans to develop guidance for the 12 projects. However, we did not evaluate those documents to determine the overall scientific merit of the projects. Our guidance below varies in level of detail and approach for the 12 projects for two reasons. First, information contained in the proponents' responses to the Council, land management plans, CBFish statements of work, and other supporting documents varied greatly in detail and content among projects. Second, unlike our standard protocol for reviews of projects for their scientific merit, multiple ISRP members did not evaluate the materials for each of the projects. Instead, one or two members, including new members, developed the specific guidance for each project, and the full ISRP reviewed the project-specific guidance for overall consistency with our general guidance provided in the programmatic comments.

Given this variety, we suggest that project proponents not only read the guidance provided for their project but also read remarks for other projects in the set. This is especially important because our comments often highlight strengths of projects and potential examples of project proponents' approaches that could apply more broadly to help improve other projects. Moreover, the ISRP encourages project proponents to explore information provided for the full set of 28 projects in the Council's review, in addition to the 13 projects for which we provide input. For example, the Oregon Department of Fish and Wildlife's *ODFW Operation and Maintenance (O&M)* (#2011-004-00) project's 2026 Summary for the NPCC describes their development and use of two complementary databases: the Conservation Easement Reporting Application (CERA) and the ArcGIS Online (AGOL) databases. ODFW's experience with these databases could inform other F&W Program lands projects. Project proponents should also consider our guidance on SMART objectives provided in this report's Programmatic Comment 1, including the sidebar. We welcome project proponents to contact us if they have questions, and we propose potential workshops to discuss guidance, hear project proponents' feedback, and learn about the challenges they encounter in developing objectives, designing and conducting monitoring, and adaptively managing their projects.

Set 1. Guidance and Suggestions on Developing and Refining Quantitative Objectives

1. Wanaket Wildlife Area (Project #1990-092-00)

Key review documents: 2026 Summary for NPCC, CBFish Statement of Work, and 2001 Wanaket Wildlife Area Management Plan

Project proponent's question for ISRP:

> *The CTUIR welcomes ISRP guidance on developing quantitative management objectives, particularly metrics that can be assessed at regular intervals with modest resource commitments. The review committee may be aware of metrics being successfully applied by other projects that are applicable to Wanaket's habitat types.*

Overview

The Wanaket Wildlife Area encompasses almost 3,000 acres in northcentral Oregon. This land is primarily shrub steppe/grassland with significant riparian wetlands. The land is being actively managed for wildlife habitat and primarily benefits mallard, other waterfowl, California quail, western meadowlark, spotted sandpiper, mink, yellow warbler, downy woodpecker, long-billed curlew, and more recently, burrowing owls. The land supports human recreational use and guards against debris dumping, invasive plants and weeds, mosquitos, and trespass of cattle.

The existing Draft Wanaket Wildlife Area Management Plan (CTUIR 2001) is 25 years old. The current Statement of Work (SOW) for Bonneville includes plans to update the Wanaket Wildlife Area Management Plan. A revisit is much needed because the activities being conducted at Wanaket Wildlife Area have considerably changed as indicated in the current SOW and in the recent response to review questions that the CTUIR provided to the Council.

Also noted is that the existing Integrated Weed Management Plan (IWMP; CTUIR 2018) is 8 years old, which should be considered for a revisit. A Mosquito Management Plan was mentioned in a document, but it was not readily available for review. The guidelines given below should be applicable to reviewed plans when a revisit of the plan is conducted.

The revised management plan would benefit from a clear statement of the goals and objectives. To assist CTUIR in the development of the goals and objectives, the ISRP offers the following guidelines and examples.

Suggestions for Improvement

Develop Goals that describe the desired outcomes of the efforts and the expected benefits to Wanaket Wildlife Area. These goals should be relevant for the next five years.

Develop objectives that describe the steps needed to implement the project and achieve the desired outcomes. These objectives should be in SMART format. See Programmatic Comment 1 and the Sidebar for further guidelines about SMART Objectives.

A good start for outlining objectives and associated actions is provided in Table 11 on page 61 of the Draft Wanaket Wildlife Area Management Plan (CTUIR 2001). Section 3.1 of Chapter 3 (page 3-17 through 3-20) of The Integrated Weed Management Plan (IWMP; CTUIR 2018) provides a description of 18 Goals with 1-7 Objectives for each goal. These objectives are not currently accompanied by specific actions nor time frames for when actions are to take place. However, the goals and objectives are largely developed and constitute a good start for adapting to SMART format to accomplish invasive weed management on the property, which is one of many activities conducted by managers of the Wanaket property. As described in CTUIR's recent response to the Council, the primary objectives for the Wanaket Wildlife Area are included in the list below. Under each objective are example questions that could become explicit statements within an objective; which for some, the answers are explicitly provided in the current SOW.

- O&M habitat/passage/structure – maintain habitat: artificial burrowing owl burrows
  - *What type and how much (e.g., acres) habitat will be maintained annually and over the next 5 years?*
  - *How many burrows will be maintained annually over the next 5 years?*
  - *How many new burrows will be constructed annually and over the next 5 years?*
  - *How many nesting pairs and fledglings will be considered success?*
- Reduce vector production
  - *How will mosquitoes be controlled and how much habitat will be treated annually over the next 5 years?*
  - *What will be considered success? (obliteration or tolerance for some?)*
- Provide public access
  - *What type and how much access will be provided annually over the next 5 years? (SOW: 75 days of public access a year, over 1000 visitors, open twice a week to hunters)*
- Remove debris
  - *How many acres will be subject to debris removal annually over the next 5 years?*
  - *How intensive will these efforts be and to what tolerance level?*
  - *How many pounds of debris are expected to be collected? (SOW: 1,000 lbs.)*
- Investigate trespass

    - *How many trespasses could be reasonably handled under the expected effort?*
    - *What type of trespasses will likely be encountered annually over the next 5 years? (SOW humans, cows)*
- Maintain Vegetation
    - *How many acres will be treated for control of what invasive weeds, annually over the next 5 years? (SOW: To be treated: 7 acres non-wetland habitat, 4 acres of upland habitat; To be maintained: 100 acres; remove unwanted vegetation from 5 acres of non-wetted habitat. NOTE: Not clear if the same acreage is to be treated annually or different acres each year.)*
- Remove Russian olive, unwanted vegetation in wetland pond and irrigation canals
    - *How many acres will Russian olive trees be removed from, annually over the next 5 years? (SOW: 250 acres of non-wetland habitat; 20 acres of upland wetland habitat)*
- Plant native vegetation
    - *How many acres will be planted with native grasses annually over the next 5 years? (SOW: 4 acres of non-wetland habitat)*
    - *How many acres will be planted with native shrubs and forbs annually over the next 5 years? (SOW: 3 acres of upland non-wetland habitat)*
- Infrastructure maintenance
    - *How much infrastructure will be maintained annually over the next 5 years?*
- Public hunting and recreation
    - *How much will be provided annually over the next 5 years?*
    - *What will be considered success?*
- Wetland management
    - *How many acres and how will they be managed annually over the next 5 years?*
    - *What will be considered success?*
- Upland habitat management
    - *How many acres and how will they be managed annually over the next 5 years?*
    - *What will be considered success?*
- Weed Control
    - *How many acres will be controlled for what weed species annually over the next 5 years?*
    - *What will be considered success?*
- Biological Surveys
    - *What type and how many surveys will be conducted annually over the next 5 years? (SOW: long-billed curlew, burrowing owls, waterfowl)*
    - *What is the expected predictability of these surveys? (e.g., qualitative, error of estimation?)*
- Produce assessment - Assess trends to monitor changing habitat conditions and species composition

- *What habitat will be monitored for changes annually over the next 5 years?*
- *What species will be monitored for changes annually over the next 5 years?*
- *What level of changes will be able to be detected based on effort applied?*

- Reporting
  - *What report will be completed annually, and in the next 5 years?*
  - *(SOW: Annual report, update of Wanaket Wildlife Area Management Plan)*

In the recent response to the Council's review questions, it was noted that a master's student from Oregon State University was investigating the effectiveness of annual herbicide treatment to control invasive grass. The project is to be commended for supporting a student to work on an important targeted study. It would be good to see the goals and objectives of this study and possibly ideas for future studies that meet project needs in the revised management plan.

The 2001 Draft Wanaket Wildlife Area Management Plan had extensive information on Existing Conditions and Desired Future Conditions (DFCs). There is an opportunity to compare the now Existing Conditions with those in 2001. The DFCs were largely described as targets to be achieved within 10 years. Certainly, these DFCs need to be revisited, and it would help to know if the targeted values have been met, and if not, which ones are yet but still hope to be met and which ones need to be modified to set realistic expectations based on current stressors (e.g., climate change, disturbance cycles) and budgetary constraints.

Summary

The 25-year-old Wanaket Wildlife Area Management Plan should be revised in the near future, as planned, and it should fully encompass the activities described in the current SOW. The list of activities provided above, and possibly more items, should help when organizing and formatting the project plans into SMART objectives. The list was derived from the CTUIR response statement, but this list does not clearly correspond to the Milestones described in the current SOW. It would be highly prudent to have these two lists correspond with each other in a more tangible, logical, and complete manner so that success can be tracked and documented on an annual basis.

2. Isqúulktpe Watershed Project (Project #1995-060-01)

Key contextual documents: 2026 Summary for NPCC, 2003 Iskuulpa Watershed Management Plan, and CBFish Statement of Work

Project proponent's question for ISRP:

CTUIR welcomes ISRP guidance on developing quantitative management objectives,

particularly metrics that can be assessed at regular intervals with modest resource commitments. Grassland metrics/targets are especially challenging, given the continued expansion of invasive annual grasses in recent years and the difficulty of restoring native plant abundance in this habitat type. The review committee may be aware of metrics being successfully applied by other projects that are applicable to Isqúulktpe's varied habitat types.

Overview

The Isqúulktpe Watershed Project represents a strong and scientifically grounded example of landscape-scale mitigation and habitat stewardship within the Columbia Basin Fish and Wildlife Program. Since the ISRP's 2017 review, CTUIR has made progress in operational management, coordinated invasive species monitoring, riparian protection, adaptive implementation, and integration of ecological restoration with broader tribal cultural values. Riparian zone protection is a paramount guiding principle, which is appropriate given the watershed's importance as critical spawning and rearing grounds for salmonids.

One of the clearest areas of progress is development of a sophisticated invasive species management infrastructure. The project expanded GIS-based weed tracking, Survey123 reporting systems, repeated photo point monitoring, GPS-based infestation surveys, and integrated treatment approaches that combine mechanical, chemical, and revegetation methods. Long-term blackberry removal and riparian revegetation efforts represent an important success of the project. Likewise, the project strengthened livestock exclusion and habitat protection strategies through continued purchase of grazing leases, expanded fencing, cattle guards, patrols, and coordination with neighboring permittees. Continued monitoring indicates improvements in riparian condition and stream temperatures relative to historical conditions following diminished grazing pressure. Lastly, the proponent's response to the Council indicates increasing integration of CTUIR's "First Foods" framework and broader ecosystem resilience concepts into project implementation. Habitat restoration, riparian protection, invasive species management, and watershed stewardship are now more explicitly framed within the context of sustaining culturally important species, ecological integrity, and tribal sovereignty.

Despite these advances and progress, several core challenges remain unresolved. Most importantly, the project still lacks a concise set of quantitative ecological objectives linked to explicit timelines, ecological thresholds, and alternative management responses. While the current SOW contains many implementation metrics (e.g., acres treated, miles surveyed, fences maintained, grazing acres rested), these are not explicitly tied to ecological outcome measures.

Perhaps more importantly, significant ecological challenges have arisen since the original management plan was drafted in 2003. Notably, alarming expansion of invasive annual grasses, especially ventenata (*Ventenata dubia*), is well documented in vegetation monitoring plots. Invasive grasses reduce forage quality, change native plant communities, and their spread substantially increases distribution of fire fuels that, in turn, increases fire risk for riparian zone habitats. Risk is likely to increase in the coming decades as the project now operates under conditions of reduced snowpack and warmer temperatures. Accordingly, wildfire resilience and climate adaptation should be increasingly important management priorities. Future management plans should emphasize and implement measures for strategic containment and protection of high-value habitats rather than broad-scale eradication attempts across all invaded grasslands. Priority areas for protection include riparian corridors, aspen stands, remaining native perennial grasslands, culturally important habitats, and natural or managed fire breaks.

The ISRP encourages CTUIR to continue refining landscape-scale monitoring and prioritization tools for invasive annual grass management. Existing field-based surveys, photo points, and vegetation plots provide valuable long-term information but may be limited by observer variability, spatial coverage, and interannual climatic variability. We suggest exploring low-elevation unmanned aerial systems (UAS), repeated seasonal remote sensing, and automated data processing workflows as promising future monitoring approaches that could complement existing GIS infrastructure and adaptive management systems. UAS-based monitoring could improve spatial detection of medusahead and ventenata, quantify rates of spread, assess fuel continuity, monitor treatment effectiveness, and improve prioritization of high-value habitats including riparian corridors, aspen stands, and relatively intact native grasslands. This recommendation is consistent with emerging best practices in western rangeland monitoring. We discuss this in more detail below.

Overall, the Isqúulktpe Watershed Project demonstrates substantial progress since the 2017 ISRP review and continues to represent a well-managed and ecologically valuable mitigation project. CTUIR has developed strong operational capacity, sophisticated invasive species management infrastructure, and a clearly integrated approach to watershed stewardship that combines ecological restoration with tribal cultural priorities. Remaining opportunities for improvement include formalization of quantitative ecological objectives and adaptive management thresholds, expansion of analytical and spatial monitoring approaches, and continued refinement of invasive annual grass and wildfire resilience strategies under changing climatic conditions. The planned revision of the watershed management plan provides an excellent opportunity to integrate these elements into a more fully articulated adaptive management framework.

ISRP Guidance Regarding Quantitative Objectives, Monitoring Metrics, and Adaptive Management

The ISRP appreciates the proponents' explicit request for guidance regarding development of quantitative management objectives and practical long-term monitoring metrics, particularly for grassland habitats increasingly affected by invasive annual grasses. We recognize that development of meaningful quantitative objectives for semi-arid grassland ecosystems at appropriate scales is inherently challenging especially with ongoing climate change, altered fire regimes, and widespread expansion of invasive annual grasses such as medusahead and ventenata. Complete restoration of native perennial grasslands is likely not feasible across all invaded areas, and management objectives should emphasize resilience, strategic containment, protection of high-value habitats, and reduction of wildfire risk.

Consider additional grassland monitoring metrics. Future quantitative objectives should focus on a relatively small number of measurable indicators that are ecologically meaningful, operationally feasible, spatially scalable, and directly linked to adaptive management decisions. Grassland monitoring metrics could include:

- Percent cover of invasive annual grasses by management unit or habitat type
- Rates of invasive patch expansion
- Proportion of native perennial grass and forb cover
- Extent and connectivity of continuous fine fuels
- Frequency or extent of post-fire invasive grass dominance
- Treatment effectiveness following herbicide application, reseeding, grazing exclusion, or prescribed fire

Consider incorporation of low-elevation unmanned aerial systems (UAS) for monitoring. CTUIR already possesses many foundational components necessary for implementation of a stronger quantitative adaptive management framework, including long-term vegetation monitoring datasets, GIS-based weed inventories, Survey123 reporting tools, repeated photo points, stream temperature monitoring, and coordinated cross-program weed management infrastructure. The ISRP encourages CTUIR to consider incorporation of low-elevation unmanned aerial systems (UAS), repeated seasonal imagery, and standardized workflows into future monitoring programs. UAS-based monitoring could be more cost effective, improve the project's ability to detect and map invasive annual grass expansion, quantify vegetation cover and fuel continuity, reduce observer bias, evaluate treatment effectiveness, and prioritize management responses across large and heterogeneous landscapes. Repeated seasonal imagery may be especially valuable because medusahead and ventenata can be distinguished from native perennial vegetation through differences in seasonal phenology or machine-learning-based discrimination of images. These approaches are increasingly being

used in western rangeland systems and may provide a practical mechanism for improving spatial coverage while maintaining manageable long-term labor requirements.

3. Tat'win Wildlife Area Operations (Project #2000-026-00)

Key contextual documents: 2026 Summary for NPCC and 2015 Rainwater Wildlife Area Land and Watershed Management Plan

Project proponent's question for ISRP:

> *The CTUIR welcomes ISRP guidance on refining and developing quantitative objectives, particularly for habitat complexity and species response metrics.*

Overview

Tat'win Wildlife Area Operations represents a long-running effort covering a large area, just over 11,000 acres that encompass nearly half of the South Fork Touchet watershed and that lies adjacent to William T. Wooten State Park. The project includes 13 miles of perennial stream channels, with 10 miles supporting anadromous and resident fishes. Strengths of this project include the fact that it explicitly incorporates the "First Foods" philosophy, the driving mission behind natural resources management for the CTUIR. The project also incorporates the Umatilla River Vision into its management goals, which describe connections between water quality, geomorphology, habitat connectivity, aquatic biota, and riparian vegetation. As an additional strength, the 2015 plan includes a table (see page 8 of the plan) that describes "Desired Future Conditions" (DFCs) which lays out a 10-year vision for forests, grasslands, riparian areas, and streams along with the strategies to achieve each DFC, species likely to benefit from the action, and First Foods likely to benefit from the action.

Guidance on refining and developing quantitative objectives, particularly for habitat complexity and species response metrics

Update the Desired Future Conditions table to evaluate progress and identify priorities. Because the Desired Future Conditions table represents a framework for action that links activities to anticipated benefits for HEP Species and First Foods and given the fact that the DFC table is over 10 years old, reviewing the plan to ensure that the target for each of the habitat types remains relevant may be warranted. This may include evaluating the degree to which the DFCs have been achieved in the last decade and reconsidering the priority ranking of each DFC.

It's also worth noting that the Council Template document calls out the fact that the current SOW includes a plan to update the 2015 Land Management Plan. It includes the following from the SOW, "This 2025 update will reflect changes to the wildlife area that have occurred

since 2015. This includes the change from Tribal Fee land to Tribal Trust Lands, updates to vegetation layers, and a summary of all activities and data associated with said activities. The Plan will be written to BPA specifications with the intention of having it presented to the NWPPC." The proponents explain that the update has not yet been completed, in part due to the fact that policy changes will be incorporated into the management of the Wildlife Area and that public meetings must occur beforehand, with a likely outcome including prohibiting nontribal people from hunting or gathering in the area. This provides even more evidence for importance and timeliness of assessing and updating the criteria in the DFC table to guide actions and priorities in the future. Additionally, it suggests the value in implementing the actions below to assess the effectiveness of past and future actions.

Monitoring wildlife in rehabilitated areas of the landscape. In 2020, CTUIR advanced efforts to improve forest health and ecological resilience of forests, basing actions on data. They conducted a forest inventory using Forest Biometrics Research Institute Protocols and have used the information to implement thinning treatments to reduce stand density, prioritize fire resistant tree species, and remove disease susceptible tree species. Given the substantial effort to manage forest habitat over the last decade, likely continued investment in forest management in the future, and the emphasis on the use of science to inform management actions, it could be timely to invest in wildlife surveys to evaluate use of managed habitat by priority species. Mule deer and elk as well as multiple bird species are cited as potentially benefiting from forest management efforts, and surveying those species should be conducted. It would be ideal if surveys could be compared to baseline data, but if such data do not exist, surveys conducted currently could provide key information going forward.

Monitoring effectiveness of weed management activities. The current statement of work includes an emphasis on control of weeds by various strategies including applying herbicide on 300 acres to address yellow starthistle, spotted knapweed, and Canada thistle infestations. The proponents note that management of weeds focuses on roads and ridgetops and where vegetation is persistent. In the sponsor response document, however, they note that it is difficult to judge the relative success of ground-based herbicide treatment. Given the substantial effort that goes into weed management, it could be appropriate to include an approach for monitoring treatment and tracking its longevity. Relatedly, conducting an evaluation of the landscape could integrate additional features that may be useful in understanding where treatments may be most important and effective.

4. Asotin Creek Wildlife Mitigation (Project #2006-005-00)

Key contextual documents: 2026 Summary for NPCC and Management plan: 2019 Blue Mountains Wildlife Areas Management Plan

Project proponent's question for ISRP:

> *If the ISRP would like to make suggestions towards developing quantitative objectives, we would welcome what you may share with us.*

Overview

The Blue Mountains wildlife areas management plan (WDFW 2019) available on the WDFW website comprehensively considers terrestrial wildlife and habitat, including for the Asotin Creek basin, with detailed objectives and performance measures (pages 76–95) that specifically address previous ISRP concerns. Quantified, specific annual accomplishments toward these objectives are provided in the annual progress reports to BPA. Overall, the terrestrial portion is outstanding.

Suggestions for improvement

With respect to aquatic resources, the management plan provides a thorough description of the distribution of marquis native salmonids and of efforts toward habitat improvement, but there may be opportunities to refine this information with additional objectives.

Consider conducting an eDNA-based inventory for aquatic species. With the understanding that the project has limited funding and thus limited ability to add new tasks, we suggest that project proponents consider, in conjunction with project partners, conducting a basin-wide, systematically spaced eDNA-based inventory of the Asotin Creek basin to generate a precise (within 1-2 km) description of the distribution of all aquatic species of interest. Such an effort, e.g., comparable to but at a much smaller scale than that done for Pacific lamprey throughout Idaho (Young et al. 2022), could be completed in one summer by two technicians, which would set a benchmark for understanding fish distribution changes in coming decades in the project area. Such information would have immediate and long-term benefits. For example, bull trout are restricted to a handful of watersheds in southwestern Washington, and delineating spawning and rearing areas (as opposed to more generically usable migratory corridors) for this thermally sensitive species could help direct land and stream management efforts to those areas with an eye toward climate change mitigation. In addition, the Asotin Creek basin is an active area of Pacific lamprey restoration being undertaken by the Nez Perce Tribe. That same eDNA sampling would provide spatially precise estimates on the progress of that restoration. This could in turn suggest additional locations where lamprey introductions in the basin may be useful and reveal where restoration has been successful and is no longer needed, both of which

can enhance species recovery and foster greater collaboration with the Nez Perce Tribe. Finally, those same eDNA samples can be archived to later provide information on the distribution of native non-game fishes, mussels, or amphibians, species that may later come to be management priorities for the project area managers.

5. Pine Creek Conservation (Project #1998-022-00)

Key contextual documents: 2026 Summary for Council and 2022 draft Pine Creek Conservation Area Land Management Plan v1

Project proponent's question for the ISRP:

> *Suggestions for quantitative objectives or any other aspect of the project deemed noteworthy or necessary would be appreciated.*

Overview

This project has been very active with a broad swath of activities. It includes stream restoration actions, bird surveys, beaver enhancement and surveys, vegetation plantings (willow and cottonwoods), weed management, species presence surveys, deer and elk monitoring, and visitor outreach. All this is happening with a single employee, the Project Manager, and the many partners that have been garnered to conduct cooperative work.

There are many objectives, actions, and accomplishments stated in narrative form in the Response statement, but these objectives are largely vague about annual targets, methods, and expected results. On the other hand, the draft Pine Creek Conservation Area Land Management Plan v1 (LMP 2022) has goals, objectives (n=12), and actions that are nearing the SMART format.

To provide an example, the Goals, Objective 12, and Actions for the monitoring activities from the LMP (2022; page 99) are copied below (with format modifications), followed by a couple examples of how they can be transformed into SMART objective format:

Monitoring Goals: Monitor the effects of property management, restoration projects, and watershed change to guide future management objectives.

Objective 12.a. Continue established monitoring routines and implement new initiatives where resource response data is negligent.

Action 12.a1. Conduct annual steelhead redd surveys in April on Pine Creek and Lower Robinson when water levels allow passage for spawning over the next 20 years. 2023-2043.

Action 12.a2. Utilize "Weed Site Evaluations Survey" located in Survey 123 app to map invasive weed locations and prioritize areas for management. 2023-2043.

Action 12.a3. Using the data compiled for high priority sites, ensure biannual herbicide treatments are conducted, in the spring or fall, as appropriate for biota. 2023-2043.

Action 12.a4. Utilize the "Indicator Species" survey in the Survey123 app to note each observation of an Oregon Conservation Strategy floral or faunal species. Compile data every 5 years to track abundance and diversity of indicator species across the landscape. 2023-2043.

Action 12.a5. Continue updating biota inventories (see Appendix X) yearly through the annual compiling of field observations recorded by Tribal staff and other qualified visitors to the property, including those logged into iNaturalist. 2023-2043.

Action 12.a6. Conduct bumblebee surveys yearly to track changes in the abundance and diversity of native pollinators 2023-2043.

Action 12.a7. Log water quality, flow rate, and depth after all thinning operations over 50 acres that occur within 1 mile of a perennial water source to track the hydrological response of juniper removal. 2023-2043.

Action 12.a8. Check visitor use surveys deposited at kiosks weekly to log visitation trends 2023-2043.

Action 12.a9. Conduct monthly patrols for livestock trespass. 2023-2043.

An example of how to convert Objective 12.a. and Action 12.a1. (from above) into SMART format:

Objective 12.a. Estimate the annual number of steelhead redds from surveys in April within established reaches of *xx* km of Pine Creek and *yy* km of Lower Robinson over the next 5 years, 2027-2032.

Action12.a.1: Train or retrain 2-4 personnel on how to conduct redd surveys before each spawning season.

Action 12.a.2: Conduct weekly steelhead redd surveys in April within established reaches of *xx* km of Pine Creek and *yy* km of Lower Robinson Creek when and if water levels allow.

Action 12.a.3: Use *xx* method to extrapolate observational data to derive an annual estimate of number of redds, with the expected CV of the estimate to be under 25%, in each stream surveyed.

Action 12.a.4: Combine redd data from previous years to track trends in numbers.

Following this guideline, then Action 12.a2 and Action 12.a3 combine to become Objective 12.b:

Objective 12.b. Conduct biannual herbicide treatments, in the spring or fall, to reduce *xx* (specific weed[s]) by *yy*% (or by *acres of distribution*) annually during 2027-2032.

Action 12.b.1: Utilize "Weed Site Evaluations Survey" located in the Survey 123 app to help map weed locations.

Action 12.b.2: Analyze invasive weed species and distributions to prioritize areas for and establish targeted effects of annual specific weed control measures.

Action 12.b.3: Treat with appropriate herbicide(s) in an approved safe manner.

Action 12.b.4: Analyze invasive weed species and distributions after treatment to assess success of specific weed control measures completed each year.

The rest of the Actions can be converted to SMART objectives, with actions, in a similar manner.

The LMP (2022) is labeled "Draft" and apparently it has not been finalized. This presents an excellent opportunity to incorporate SMART Objectives before the draft is finalized.

It is notable that the activities described in Objective 12 above are not showing up in a compatible manner in the current Bonneville SOW. The one item in the SOW that is related appears to be: "O: 158. Mark/Tag Animals – Audio recording and data collection on bats and trapping/collaring Mule Deer." Why are not all the activities in Objective 12 (and other objectives) expressed in the SOW? Perhaps some activities are simply not a direct part of the Bonneville project funding, but most would probably be part of the overarching goal of the project. Striving towards a one-to-one correspondence of the LMP with the Work Elements and Milestones in the SOW is highly recommended so that success can be tracked and documented.

Summary

The project should work towards formulating Objectives in SMART format that specify annual and 5-year targets. Admirable groundwork has been done and conversion to SMART objectives should be relatively straightforward, following guidelines presented above in Programmatic Comment 1 and sidebar. Measuring project success would be greatly facilitated with the addition of explicitly stated targets to expand on the myriad of good activities and to more readily track the accomplishments of this project.

6. Upper John Day Conservation Lands Program (Project #2000-015-00)

Key contextual documents: 2026 Summary for NPCC, Forrest and Oxbow Ranch MAMP, and 2026 Draft Dunstan Homestead Preserve LMP

Project proponent's question for ISRP:

> *Project work scheduled for the future involve addressing upland health in relation to riparian corridor work. What would be the ISRP's guidance in a direction to quantify objectives?*

Overview

The Upper John Day Conservation Lands Program is composed of three different properties, the Forrest Conservation Area, the Oxbow Conservation Area, and the Dunstan Conservation Area, as well as the Tribal Native Plant Nursery program. This project has both an anadromous component, reviewed during the 2021-2022 Anadromous Fish Habitat and Hatchery review, and a wildlife/lands component.

According to the 2026 Lands Review sponsor response, the Forrest and Oxbow Conservation Areas continue to be governed by the 2010 Forrest and Oxbow Management and Monitoring Plan (MAMP), and the Dunstan Conservation Area is covered under the 2026 Dunstan Conservation Area Land Management Plan (LMP), which is currently in its final draft stage. There is an expectation that the two plans will be combined to create an integrated land management plan.

In their response to the Council's tailored questions, the sponsors provide a table of objectives and actions (Table 1) that was originally provided in the 2021-2022 Anadromous Fish project proposal. The Anadromous Fish project proposal also provided a narrative list of goals; however, in that proposal there was no direct link between the goals and the table of objectives and actions. Additionally, the objectives were broad and not quantitative. In their review of the project during the Anadromous Fish review, the ISRP commented that some of the objectives were vague in terms of what would be done and when it would occur.

The Forrest/Oxbow MAMP and the Dunstan LMP each contain their own extensive sets of goals, objectives, and actions. These are written differently from Table 1 in the sponsor's Land Review response. It is unclear the extent to which the objectives in the LMP and MAMP govern the actions implemented on the ground, versus the objectives and actions provided in the 2026 Lands Review sponsor response.

Suggestions for Improvement

To create a current, refined version of SMART objectives, each of these versions should be reviewed, and relevant pieces combined and updated. The Dunstan LMP provides the best

and most up-to-date set of goals, objectives and actions, and would be the best starting point for this effort, with additional objectives and actions to be added for the Forrest and Oxbow properties. The Dunstan plan has identified Goals, Objectives, and Actions; however, additional quantification of objectives and actions would be beneficial.

The table below provides example suggestions using one part of Table 11 of the LMP and incorporating relevant actions from Table 1 of the sponsor response for the Lands Review. Some examples of adding monitoring actions to the objectives are also included. Additional monitoring actions provided in Table 16 of the LMP may also be relevant here.

It may be the case that some of the objectives have not yet been completely quantified. For those goals and objectives, specific quantified targets can be identified in annual BPA work plans.

Goal 3: Restore and treat degraded and at-risk habitats to their full ecological potential and to naturally self-sustaining conditions, where applicable, utilizing both active and passive restoration and rehabilitation techniques directed at population limiting factors for fish and wildlife implementing resiliency to climate change and disturbance		**Time frame**
Objective 3.a	Track and control invasive plant populations, including but not limited to *Cirsium spp., Centaurea spp., Linaria spp., Ventenata dubia*, & *Taeniatherum caput-medusae* *on at least # acres* as staffing and funding allow, by prioritizing noxious and invasive species ~~as prioritized~~ to make reductions in populations throughout the property by 2027 [ISRP note: The objective could be specified as acres/year target or % cover of non-native species, or target proportion of native to non-native species.]	2022-2027
	Treat # acres/year of upland habitat and # acres/year of riparian habitat per year	
Action 3.a1	~~Any ground disturbance will be seeded or planted with native vegetation, managed, and monitored to stop noxious plant intrusion~~ Seed or plant all ground disturbance areas with native vegetation [ISRP note: can any specific types of native vegetation be specified?]	2022-2027
Action 3.a2	Survey and update maps annually to better track progress towards invasive plant control [ISRP note: Is there a target for keeping the acreage of invasives at or below? What about species survival?]	2022-2027
	Monitor re-seeded and re-planted areas annually for x years.	
Objective 3.b	Plan removal of all remaining railroad grades within the floodplain of the Middle Fork John Day River that are barriers to (2-year? 10-year? 25-year?) flood stage water, and revegetate riparian and disturbed sites within five years (See Figure 13)	2022-2027
Action 3.b1	Identify remaining grades preventing flood water from reaching the full floodplain (miles per year surveyed)	2022-2024
Action 3.b2	Remove identified railroad grades and revegetate within x years	2025-2027
	Monitor floodplain inundation frequency or stage or groundwater elevation in the floodplain	
Objective 3.c	Catalog and initiate designs and implement projects to remove any remaining rock barbs and riprap segments along x miles of the MFJD River and treat sites with large wood structure to maintain channel	2024-2025

	dimensions. Remove riprap and rock barbs installed along x miles of the river in the 1970s and 1980s. Larger sites will be replaced with wood structures to prevent river over-widening	
Action 3.c1	Incrementally plug or otherwise remove x miles of irrigation ditches to restore natural overland drainage patterns on the Property	2022-2027
Objective 3.d	Address stream constraining additions from past legacy actions that impede natural channel migration and adjustment on Coyote and Big Boulder Creeks by 2027 in coordination with the John Day Watershed Restoration Program	2022-2027
Action 3.d1	Remove x number of legacy log weirs and associated rock ballast from Big Boulder Creek on Property annually or over an x-year period	2024-2026
Action 3.d2	Remove x number of legacy log weirs and associated rock ballast from Coyote Creek on property annually or over an x-year period	2022-2027
Objective 3.e	Using plans and funds of Objective 1.b, implement forest thinning, fuels reduction, and other actions that promote resilient, late-successional mixed conifer or Ponderosa Pine forests on x acres of the Property as a long-term management effort to achieve x percent cover.	2022-2027
Action 1.e1	Thin forest fuels in dangerous zones by cutting young trees, piling and burning fuels from 2024 to 2026 (is there a target fuel load?)	2024-2026
Action 1.e2	Partner with USFS, ODF, and others to engage in prescribed burns as available, no less than every 18 years to keep fuels at sustainable levels with a target of x number of acres or x percent of area each burn.	2027+
Objective 3.f	Plan and address irrigation features and ditches on x miles of stream or x number of ditches on the Property through a series of blocking, filling, or breaching ditches to allow snow and rain runoff to naturally return to river without diversion	2026-2027
Action 3.f1	Incrementally plug or otherwise remove irrigation ditches to restore natural overland drainage patterns on the Property	2026-2027
Action 3.f2	Develop plan to remove all irrigation infrastructure once water rights are permanently leased instream, including fish screens, headgates, and other structures at x number of diversions.	2027-2027
Objective 3.g	Collaborate with the John Day Watershed Restoration Program to assess and determine if implementing activation of historic meanders to increase river miles and improve pool to riffle ratios is beneficial to Property habitat by 2027 [ISRP note: How many potential locations might be considered for implementing activation of historical meanders? Or number of river miles?]	2023-2027
Action 3.f.1	Assess past data collection efforts and perform updated longitudinal surveys and identify appropriate locations for pool creation and large wood placement on x miles of stream.	2023-2025
Action 3.f.2	Determine from surveys if channel project is necessary to habitat needs on Property to move forward with project development	2025-2027

7. Upper Columbia Land Operation and Maintenance (Project #2008-102-00)

Key contextual documents: 2026 Summary for NPCC and eleven land management plans

Project proponent's question for ISRP:

We have initiated a few quantitative objectives (see response to Question 6). What other standard quantitative objectives should be incorporated in future land management plans for this area, mostly a low elevation (< 1,000 ft.), arid ecosystem?

Overview

The response acknowledges that formal quantitative objectives and performance measures have not yet been adopted. The three draft 2035 objectives—non-native plant cover below 10%, canopy closure above 80% along tributaries, and woody vegetation above 25%—are strong starting points. As presented, they remain somewhat general to fully address the prior ISRP recommendation. The objectives could be refined by property or habitat type, tied to current baseline conditions, expressed as SMART objectives with interim milestones (see Programmatic Comment 1 and sidebar), and linked to a practical monitoring design. Evolving LMPs could distinguish upland shrub-steppe, riparian, wetland/spring, and disturbed former agricultural/orchard areas, because single numerical targets may not be appropriate across all parcels.

Strengths

The response is strong in three respects: (a) it acknowledges the gap directly rather than implying that qualitative monitoring is sufficient, (b) it proposes measurable draft endpoints, and (c) it links those endpoints to the ecological trajectory described elsewhere in the response (e.g., transition from non-native-dominated agricultural lands to native graminoids, then forbs, then woody species, ultimately toward shrub-steppe or riparian/xero-riparian vegetation where appropriate).

Follow-ups

Some of the proposed objectives could be better defined. For example,

- Objective 1: "Non-native plant species <10% within current properties" could be clarified. Does this refer to percent cover, density, biomass, or species richness? It could also distinguish between all non-native species, noxious weeds, and high-risk invasive species.
- Objective 2: "Canopy closure >80% along tributaries" could be appropriate for some tributary reaches but could be challenging in other settings. Some LMPs note that riparian vegetation may be difficult where water is intermittent. In those cases, dryland

shrubs and trees may provide bank stability and shade functions even if a full riparian canopy cannot be achieved. Stream width is another consideration; e.g., it may be practical for smaller tributaries, but impractical for streams (fourth order or larger).

- Objective 3: "Woody vegetation >25%" can be refined. The LMPs describe different desired conditions for riparian buffers, xero-riparian zones, and upland shrub-steppe areas. As such, the objective could be stratified by ecological setting.

Quantitative objectives for future LMPs

Possible quantitative objectives that could be further incorporated into LMPs, leading to a measurable framework for assessing ecological condition, protection effectiveness, and adaptive management, are suggested below.

- **Native vegetation establishment and desired plant-community trajectory.** LMPs could specify quantitative targets for the establishment and persistence of native vegetation, recognizing that many properties are being transitioned from former agricultural, orchard, or weed-dominated conditions toward native graminoid, forb, shrub-steppe, riparian, or xero-riparian communities. A practical objective could be to increase native perennial plant cover over time, with separate targets for native grasses, native forbs, and native shrubs or trees depending on the site. For example, restored units could aim for a defined percentage of native perennial grass cover within five years, followed by measurable increases in native forb richness and shrub establishment within ten years. Each property could identify its desired future plant community and then track whether management actions are moving the site in that direction. This is in line with the LMPs' emphasis on restoring vegetative resources and ecological functions.
- **Invasive and noxious weed reduction.** LMPs could include explicit quantitative thresholds for non-native and noxious weed abundance. The proponent's proposed target of reducing non-native plant species to less than 10% is a useful starting point, but objectives should clarify whether the measure is percent cover, density, or mapped patch area. A better-defined objective could distinguish total non-native cover from noxious weeds (and others) identified across the LMPs. A reasonable future objective could be to reduce priority noxious weed cover or patch area by a specified percentage within three to five years, prevent expansion into restored areas, and treat new infestations within one growing season. This could provide a basis for judging whether weed control is producing lasting ecological benefit.
- **Riparian, xero-riparian, and tributary habitat function.** Because properties were acquired to protect tributaries, cold-water refuges, streambanks, fisheries monitoring access, or river margins, LMPs could include quantitative objectives for riparian/xero-riparian conditions. These could include target buffer widths, native woody vegetation

survival, canopy closure or effective shade, bank stability, and protection from livestock or unauthorized access. The proposed objective of greater than 80% canopy closure along tributaries is useful but should note regions where hydrology and geomorphology make that target ecologically realistic. In arid reaches, the objective may need to focus instead on native shrub cover, bank stabilization, and partial shade. The LMPs repeatedly emphasize that riparian vegetation supports shade, bank stability, sediment reduction, organic inputs, and fish and wildlife habitat; these functions should be translated into measurable outcomes.

- **Shrub-steppe structure, soil stability, and arid-land resilience.** For low-elevation and arid portions of the project area, LMPs could include quantitative objectives specific to ecological function. This could be important because several LMPs describe invasive annual plants and accumulated dead material as increasing fire risk. In an arid ecosystem, success should be measured not only by plant survival, but by whether the site is becoming more resistant to weed reinvasion, erosion, and altered fire cycles.
- **Protection, access control, and land stewardship performance.** LMPs could include quantitative protection objectives, as the project's purpose includes maintaining acquired properties and preventing degradation from unauthorized use, dumping, vandalism, livestock intrusion, and unmanaged access. Quantitative metrics could include the percentage of functional perimeter or riparian fencing, time required to remove dumped materials, number of unauthorized vehicle tracks or access points, and completion of hazard or structure removal. These measures could convert routine O&M activities into performance-based stewardship indicators. Monthly site visits, fencing inspections, gate maintenance, public access control, and hazard response are already described, and future LMPs could formalize these as measurable standards.
- **Fish, wildlife, culturally significant species, and habitat-use indicators.** LMPs could include a (modest) set of quantitative indicators that connect vegetation and protection actions to expected fish and wildlife benefits. These need not be elaborate population studies, but they could track functional habitat outcomes. Examples could include survival and recruitment of culturally significant plants, mapped extent of sensitive plant populations, availability of native shrub patches for birds and small mammals, etc. For fish-related properties, indicators could be paired with riparian shade, stream temperature, bank stability, or cold-water refuge metrics. This would address the prior ISRP review's comment that reporting should move beyond acres treated, miles fenced, and describe the functional habitat benefits likely to accrue to fish and wildlife.

Summary

While formal quantitative objectives have not yet been adopted, the proposed 2035 objectives are a very good starting point. Future/evolving LMPs could refine these into SMART, property-specific, habitat-stratified objectives. LMPs could include quantitative metrics for native vegetation establishment, invasive plant reduction, riparian buffer conditions, shrub-steppe structure, fuel and erosion risk, fencing/access protection, and selected habitat-function indicators. These metrics could be tied to baseline conditions, monitored with repeatable methods, and used to guide adaptive management.

Set 2. Guidance and Suggestions Related to General Project Implementation

1. Scotch Creek Wildlife Mitigation (Project #1996-094-01)

Key contextual documents: 2026 Summary for NPCC and 2017 Scotch Creek and Sinlahekin Wildlife Areas Management Plan

Project proponent's questions for ISRP:

- *What aspects of the project would you like to see improved, need more attention or are lacking?*
- *Are there any specific restoration activities you would like to see implemented?*

Overview

The project proponent's response provides an extensive list of habitat management activities that address wildlife mitigation on their properties. These activities are also described in the 2017 Scotch Creek and Sinlahekin Wildlife Areas Management Plan. In this 10-year plan, which is due to be updated in 2027, the proponents outline their goals, objectives, performance measures, and adaptive management framework. A comprehensive list of performance measures, including many that are SMART, are provided in Appendix A of this plan. Their plan considers many aspects of resource management, including but not limited to habitat management, habitat connectivity, weed management, restoration, and actions to improve climate change resiliency.

With the caveat that activities apply broadly to both Wildlife Management Areas, some highlights include:

- A focus on ecological integrity assessment and monitoring through the application of standardized tools. This includes the identification of ecological systems of concern in the Scotch Creek WMA.

- The use of working groups to focus on key challenges (e.g., the Washington Wildlife Habitat Connectivity Working Group).
- Restoration of shrub-steppe habitat.
- Successful efforts to reintroduce Columbian Sharp-tailed Grouse.
- Species-specific game management plans.
- Exploration of fecal DNA as a tool to evaluate the diet of Columbian Sharp-tailed Grouse.
- Many objectives are SMART.

Per the proponent's 2026 response document, the main challenges in achieving project objectives are limited funding, staff training, and staff retention.

Suggestions for improvement

In response to the proponent's questions for the ISRP and based on the information provided, the Scotch Creek Wildlife Mitigation project is robust, and there are no major or obvious gaps. However, we recommend revising the performance measures in the Management Plans so that more are SMART with clear time frames for completion (see Programmatic Comment 1 and sidebar). In the current plan, not all performance measures had a clear end date and few extended beyond 2018. In addition, objectives are not always aligned with a goal or desired future condition. For example, the plan has the goal of achieving a viable grouse population, but the metrics include the number of grouse released; there is no goal for the population size even though it is being estimated. The revised plan should identify desired future conditions, include short- and long-term objectives, and clearly distinguish recurring or annual objectives from longer-term objectives and overall project goals or targets. In addition, short-term objectives should clearly link to long-term objectives and overall project goals. Such scheduling would better enable the proponents to track and report their progress towards the project goals.

In response to the second question, we do not recommend any additional or alternative habitat restoration implementation activities. Instead, our recommendation to refine the project's goals, objectives, and performance measures apply equally to habitat restoration activities. In general, the effectiveness of restoration activities should be tracked. For example, vegetation planting is a major activity. Ideally plant survival would be assessed and the accumulation of native vegetation monitored and reported. Similarly, what is the effectiveness of removals? More generally, the proponents could specify the target acreages or other metrics for desirable and undesirable vegetation types and identify how progress towards these states would be tracked.

2. Shillapoo Wildlife Mitigation (Project #2003-012-00)

Key contextual documents: 2026 Summary for NPCC and 2006 LMP, which has periodic updates, most recently a 2021-22 Wildlife Area Plan Update. See WDFW Shillapoo webpage for other updates.

Project proponent's question for the ISRP:

> *The management team looks forward to the ISRP's evaluation and welcomes any technical feedback regarding the proposed management actions for the Shillapoo Wildlife Area*.

Overview

The Shillapoo Wildlife Mitigation project is well-established and is making good progress on its clear objectives, which are SMART. WDFW has changed some of their management tactics over the years as they have learned from their experiences. The proposed management actions are appropriate given the current state of understanding about this project, especially the focus on restoring the hydrology of wetland areas and eventual enhanced connectivity to the Columbia River.

Suggestions for improvement

1. **Incorporate climate resiliency in an updated management plan.** The ISRP understands that WDFW intends to update the management plan for this project when they have the resources needed to meet new department requirements for public participation and ecological assessment. Given the shift in focus towards climate resiliency, an updated plan will be critical to guide the project, and the ISRP offers their encouragement that this be done as soon as feasible.
2. **Enhance data collection and reporting to guide vegetation management.** We offer a few ideas for how the proponents could further enhance this project with enhanced data collection and reporting, which could increase the effectiveness of adaptive management. First, the data presentation about purple loosestrife was both heartening and effective. It would be helpful to report similar data for other plants species of concern, both desirable and pest species, along with goals for the project. This would allow easy tracking and documentation of status relative to these goals. The proponents might also consider the use of designed experiments (random treatment assignments to replicate plots with controls) when evaluating vegetation interventions, expanding the scale of treatments as better treatment strategies are identified.

3. **Consider low-cost wildlife monitoring.** The ISRP appreciates that funding is limited but suggests that another activity that the proponents might consider is low-cost monitoring of wildlife response. Given the popularity of this wildlife area with birders, eBird data (http://ebird.org) could be used to monitor trends in avian species of interest. Albeit at greater expense, effort, and complexity, camera and acoustic sensor networks can automate detection and reporting of focal species. While relatively complex and expensive to set up compared to manual analysis of camera and acoustic data, such systems can be cheaper to operate and would generate valuable data for adaptive management. Kissling et al (2024) and Ruff et al (2021) provide examples of what can be done with cameras and acoustic monitors, respectively.

3. Albeni Falls Wildlife Mitigation-Kootenai Tribe (Project #1992-061-05)

Key contextual documents: 2026 Summary to NPCC and 2026 Adaptive Management Plan

Project proponent's question to ISRP:

> *The KTOI Wildlife Program believes the 2026 AMP framework and the many documents and project designs included by reference provide a comprehensive summary of our project. We welcome any feedback the ISRP is willing to provide to strengthen or clarify this framework*.

Comments on the 2026 Adaptive Management Plan

The 2026 Adaptive Management Plan (AMP) responds to recommendations for a clearer adaptive management framework. Among its strengths is that it brings the Albeni Falls Wildlife Mitigation Program and the KROME Project into a single framework while preserving the distinct histories, objectives, and mitigation-crediting approaches of each program. The plan links objectives, strategies, management actions, monitoring metrics, success criteria, and adaptive management responses, providing a path from stewardship and restoration actions to measurable outcomes and management learning. The following comments are offered as suggestions to clarify and strengthen the framework, not as an in-depth technical review.

Clarify relationships among related programs. The AMP explains that Albeni Falls and KROME are integrated for management and monitoring, while KRHRP restoration actions may contribute to KROME mitigation crediting but are monitored under a separate plan. The framework could be strengthened by adding a summary of how Albeni Falls, KROME, KRHRP, and UWMEP fit together. This could clarify which program is responsible for land acquisition and stewardship, which addresses floodplain and riparian mitigation, which restoration

actions are incorporated by reference, and where UWMEP procedures and data are used selectively (e.g., amphibian M&E).

In the recent response to the Council's review questions, the KTOI stated that they and their TRT decided to develop their own set of M&E procedures because of more relevance to past data available and more specificity to the own set of species to monitor. It is unclear, however, to what degree the KTOI are cooperating with the UWMEP project and whether they are sharing data where opportunities exist. This type of data sharing is highly encouraged so that wider regional patterns can be better evaluated.

Make adaptive-management decision rules more operational. The AMP appropriately assigns monitoring results to three categories: meeting success criteria, uncertain, or not meeting success criteria. These categories support decisions about additional data collection, maintenance, adaptive management actions, and funding requests. This structure could be made more operational through a short decision-rules section that explains what happens when metrics meet expectations, when results are uncertain, when criteria are not met, or when repeated shortfalls suggest the need to reconsider the underlying management strategy.

Distinguish types of monitoring. The AMP includes a broad set of monitoring metrics. These could be further organized by distinguishing among implementation monitoring, effectiveness monitoring, and ecological response monitoring. Implementation monitoring would determine whether planned actions were completed as designed. Effectiveness monitoring would evaluate near-term habitat responses, such as planting survival, reduced weed cover, hydrologic connectivity, or wetland indicators. Ecological response monitoring would assess whether broader habitat and wildlife functions are being maintained or improved. This distinction would clarify the purpose of each monitoring activity and how each contributes to adaptive management.

Strengthen cross-property learning. The AMP is strong at the property level, but it could better explain how lessons learned will be captured and applied across conservation units. Because the plan covers multiple properties, it provides an opportunity for comparative learning across habitat types, restoration approaches, and management conditions. Framing the AMP as a cross-property learning system could strengthen the adaptive management approach and show how experience at one conservation unit can inform future actions at others.

Elaborate how "TBD" elements will be finalized. Some components of the AMP remain under development, which is reasonable for a living adaptive management framework. However, the process for moving from "TBD" to finalized site-specific objectives could be made explicit. The AMP could describe a standard sequence for new or developing

conservation units: baseline assessment, desired future conditions, management actions, metrics, short- and long-term success criteria, and incorporation into the AMP tracking table. This would show which unresolved items are part of a deliberate process to be completed rather than gaps in the framework.

Clarify preservation as a valid management pathway. The AMP appropriately recognizes that active restoration is not always the preferred management response. In some conservation units, success may be defined by maintaining (sensitive) ecological conditions and avoiding unnecessary disturbance. A brief statement explaining that preservation, maintenance, and restoration are all valid management pathways could help clarify why some sites are managed primarily to protect existing ecological value, while others require more active restoration or enhancement.

Note climate and hydrologic uncertainty. Given the importance of hydrology, drought, forest conditions, invasive species, and long-term vegetation trajectories, the AMP could benefit from a short section acknowledging climate and hydrologic uncertainty. This section could identify key risks such as changing snowpack, altered runoff timing, shifts in inundation frequency, drought stress, wildfire risk, forest health changes, and invasive species expansion. It could also explain how monitoring and adaptive management will detect and respond to these changes.

Link between crediting and ecological performance. The mitigation-crediting section explains that Albeni Falls and KROME apply credits differently, including differences based on acreage, protection agreement length, and whether land is protected or restored. The AMP could clarify that **crediting** and ecological success are related but not identical: crediting accounts for mitigation obligation, while monitoring evaluates whether protected or restored lands are maintaining or improving intended habitat functions over time.

Specificity of management actions and expected effort. The conservation unit plans are well organized and provide useful detail on history, assessments, strategies, and management actions. The monitoring and evaluation tables are also helpful. However, objectives and action statements could be strengthened by including more specificity about expected effort and measurable outputs where feasible. Examples include acres treated, plants installed, frequency of weed control, number of monitoring plots, or other quantifiable implementation measures. These values will depend on annual budgets but including them where possible would help link work plans, budgets, implementation tracking, and evaluation of progress.

Address capacity and budget constraints. The sponsor response anticipates challenges with annual operations and maintenance funding as KTOI acquires new properties, expands restoration, and faces increasing costs. The AMP could be strengthened by adding a

prioritization framework for constrained funding conditions. This could distinguish among essential stewardship actions, monitoring needed to protect past investments, new restoration or enhancement actions, expanded ecological response monitoring, and synthesis. Such a framework would demonstrate an approach to sustaining conservation value if funding does not keep pace with program growth.

Editorial Suggestions

Title and structure of the AMP. The current title **"Adaptive Management Plan"** may not fully convey the scope of the 2026 document. The document is more than an adaptive management framework: it also functions as an updated land management plan for the existing Albeni Falls conservation units, incorporates monitoring and evaluation plans, and provides property-specific information through the attached conservation unit plans. At the same time, there is a reasonable argument for retaining "adaptive management," because the document does provide a structured process for evaluating outcomes, adjusting actions, monitoring results, reporting progress, and applying lessons learned. Consequently, a revised title could be ***"Albeni Falls and KROME Conservation Unit Land Management, Monitoring, and Adaptive Management Framework."*** This title would signal that the document integrates land management planning, monitoring and evaluation, and adaptive adjustment.

Organization of the conservation unit plans. Attachments (B) through (F) are central to the document's purpose. Consider whether they should remain as attachments or be elevated to full chapter status. Promoting them to chapters could make the document feel more integrated and easier to navigate. Alternatively, the programmatic adaptive management framework could stand alone, with the conservation unit plans issued as companion land management plans. Either approach would better distinguish the overarching framework from the site-specific plans.

Support for the adaptive management framework. The adaptive management framework is clearly presented, but it would benefit from a small number of supporting references on adaptive management, monitoring, evaluation, and area-based conservation (e.g., for a good treatment of the subject, see *Hoffmann, S. 2022. Challenges and opportunities of area-based conservation in reaching biodiversity and sustainability goals. Biodiversity and Conservation 31:325-252*). It would also be helpful to include a brief example of how the framework would work for a specific conservation unit or management action. A worked example could help future implementers see how monitoring results lead to evaluation, decisions, adjustment, and documentation.

Pagination and navigation. Because each attachment begins with "page 1," it can be difficult to know whether the reader is in the main document or in a specific attachment.

Relabeling pages by attachment, for example, A-1, B-1, C-1, and so on, would make the document easier to navigate and cite.

4. Southern Idaho Wildlife Mitigation--Shoshone-Paiute Tribes (Project #1995-057-03)

Key contextual documents: 2026 Summary for NPCC and Management Plans

Project proponents' questions for the ISRP:

- Received in Pole Creek Response - *The Tribes would appreciate some direction as to what specific implementation and compliance monitoring ISRP would feel is adequate for this project given the limited funding available*.
- Received in the Wilson 101 Ranch Response - *The SPT would appreciate any/all direction as to what specific implementation and compliance monitoring ISRP would feel is adequate for this project given the limited funding available. Any direction or clarification will be accepted*.

Overview

The two properties included in this project, Pole Creek and Wilson 101 Ranch, have multiple parcels, and their Land Management Plans will be revised in 2027 and 2030, respectively. The project's overarching goal is to protect, restore, and maintain shrub-steppe, wet meadow, and scrub-shrub wetland habitat. Specific objectives include restore Pole Creek to fully functioning, control weeds, increase deciduous scrub-shrub wetlands, revegetate riparian habitat, and improve sagebrush steppe habitat to benefit bobolink, sandhill cranes, greater sage grouse, and Columbia spotted-frog, among others.

The most recent ISRP review (2017) indicated that the "project would benefit from more detailed quantitative objectives with timelines for all elements of the project" and that the lack of M&E protocols to assess if management actions are leading to achievement of objectives makes it difficult to determine if management actions are leading to benefits. The available Pole Creek Management Plan dates to 2018 and Wilson 101 Ranch dates to 2011; both are presented as five-year plans and likely need updating.

The properties are managed separately, and Wilson 101 Ranch, in particular, has had significant staff turnover since the 2017 review (e.g., four managers). Review of current responses and recent annual reports (CBFish.org) indicate that there has been a good deal and variety of management actions on both properties, working in partnership with various state and federal agencies, such as extensive exclusion fencing, weed and juniper management, native planting, low tech and passive stream /riparian restoration, and flow

restoration. Baseline habitat and several species surveys have been conducted or are in process. Monitoring activities, more robustly reported for Pole Creek, are ongoing at both properties, with some aspects involving partner state and federal agencies. Monitoring metrics include miles of fencing installed/repaired, established photo points, vegetation transects, and annual egg mass and frog surveys. It is not always clear, from the reviewed documents, how monitoring data and analysis are informing management activities and if the project is trending toward meeting desired future conditions.

Suggestions for improvement

Both Management Plans (Pole Creek, 2018; Wilson 101 Ranch, 2011) include specific quantitative targets for desired future conditions of habitat (shrub-steppe, wet meadow-spring, riparian shrub and aquatic habitat) and narrative targets for desired future conditions of fish and wildlife (e.g., mule deer, greater sage grouse, yellow warbler, Columbia spotted frog, exploring beaver reintroduction).

As Management Plans for both properties will be revised in the next few years, it may be timely to recommend plan improvements and refining monitoring protocols/metrics/analysis that better address and assess trends towards/achievement of desired future conditions and link to assessing the biological and physical response of habitat and focus species to management actions.

This could include:

- Formulating SMART objectives and actions:
    - Include short-term and longer-term objectives.
    - Create a table clearly linking (quantitative) objectives, actions, performance measures, and time frames.
- Adaptive management plan:
    - Consider effects of wildfire on management objectives/attainment of desired future conditions (responsiveness to wildfire; effects on future potential trajectories).
- Refining monitoring protocols/metrics specific to assessing trends towards or achieving previously stated (and newly developed) quantitative objectives and desired future conditions:
    - Does the effort allocated for the frequency/scale of current (metric) data collection align with data analysis needs (measures of trends and performance, informing management decisions) for the new Management Plan

cycle? Would a prioritization framework for constrained funding conditions be beneficial?

- Given the importance of wetland and riparian habitats to desired future conditions and recent actions to enhance and restore these features, consider including quantitative measures to track changes in status linked to the specific restoration goals.
- Are there viable technologies/advancements that could improve monitoring approach and effectiveness for some metrics (established or newly developed for revised management plans)? Have partner agencies developed protocols that could be transferred/leveraged to meet project needs?
    - The ISRP appreciates that funding is limited but suggests considering low-cost methods for monitoring wildlife trends, such as wildlife cameras and audio recording devices that can detect species through their calls. Albeit at greater expense, effort, and complexity, camera and acoustic sensor networks can automate detection and reporting of focal species. While relatively complex and expensive to set up compared to manual analysis of camera and acoustic data, such systems can be cheaper to operate and would generate valuable data for adaptive management. Kissling et al. (2024) and Ruff et al. (2021) provide examples of what can be done with cameras and acoustic monitors, respectively.
    - Unmanned aerial vehicles represent a rapidly emerging technology that may be able to assist with vegetation surveys in a cost effective manner.

5. Shoshone-Bannock Wildlife Mitigation (Project #1995-057-02)

Key contextual documents: 2026 Summary to NPCC and Land Management Plan

Project proponent's question to the ISRP:

> *Request for general guidance on improvements to wildlife mitigation programs (per Council staff teleconference with project proponent on February 20,2026).*

Overview

The goal of the Southern Idaho Wildlife Mitigation Program (SIWM) is to protect, mitigate, restore, and enhance wildlife populations and habitat through acquisition of land, operation and maintenance, and management activities. Since 2017, routine activities continued such

as vegetation management, the maintenance of buildings and fences, administration of agricultural leases, and operations and maintenance. However, logistical constraints, insufficient funding, and staffing shortages were often limited when and where these activities took place. The majority of on-the-ground work focuses primarily on two of the property parcels; less so on outlying parcels. The program is currently without a manager and seems to be in a holding pattern. The response indicates that no implementation and compliance monitoring is currently being done (or is unknown), but this is somewhat inconsistent with the SOW. In addition, there is ambiguity over the type of adaptive management taking place. Fully SMART objectives are not currently in place.

The SIWM Management Plan originated in 2014 (revised in 2016) and was reviewed in the ISRP's 2017 Wildlife Categorical Review. This document includes a large number of aspirational objectives, many of which are highly qualified and may not be achievable. Thus, the ISRP had recommended that SMART objectives be developed for project activities and integrated into the plan in 2018. This aligned with the proponent's recognition that aspects of the plan may be "revisited and edited every ten years or less if needed" and that it would move beyond HEP to "develop its own monitoring and evaluation protocol based on baseline assessments." Moreover, "Revise Management Plan" was included as an element in the 2025 SOW, with most milestones seemingly in progress. Revision of – and additions to – the SIWM Management Plan appears to be a current priority.

Suggestions for improvement

We emphasize the value of updating the SIWM Management Plan with SMART objectives (see Programmatic Comment 1 and sidebar) for implementation, property management, and effectiveness monitoring. In particular, the proponents should pay close attention to the time-bound nature of these objectives and ensure they are achievable given the real constraints. Fortunately, desired future conditions have been identified by habitat type. This is a good starting point for developing interim habitat-related objectives.

We recommend that the proponent develop a prioritization framework to deal with funding, staffing, and other logistical constraints. In turn, when developing short-term objectives and work plans, we recommend that proponents optimize on-the-ground activities that align with high-priority goals and objectives. Moreover, if the four outlying areas cannot be visited on an annual basis to complete routine maintenance or M&E activities, perhaps they could be visited on a rotating basis.

References for Section IV. ISRP Guidance Comments

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